Stormwater Management Report

BROOKLINE WOODS

Project Location:

Tax Map D Lots 50 & 70
Route 13
Brookline, NH 03033

Prepared for:

Tamposi Brothers Holdings, LLC
PO Box 847,
Hollis, NH 03049

Date: March 18, 2024

STATE OF NEW HAMPSHIRE
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STORMWATER MANAGEMENT REPORT
BROOKLINE WOODS
TAX MAP D, LOTS 50 & 70
NH ROUTE 13
BROOKLINE, NEW HAMPSHIRE

Prepared for:
Tamposi Brothers Holdings, LLC

March 18, 2024

I) INTRODUCTION

The following are stormwater drainage calculations for the proposed residential development known as Brookline Woods on New Hampshire Route 13 in Brookline, NH. The proposed development consists of two parcels totaling 130.46 acres. The parcels we be combined and re-subdivided into 3 parcels. 54.5± acres (41.8%) of the combined parcels will be placed in permanently protected open space (proposed Lot D-50). There is a proposed 6.0-acre lot on the south end of the parcel (Lot D-50-1) and a 70± acre lot on the north end of existing lot D-50 (Lot D-50-2). The proposed residential development will occur on the northerly lot (D-50-2) and will consist of 40 Units of Workforce Housing (30 units price controlled, 10 units market rate) and 58 Units of Housing for Older Persons (55+). Access to the units is provided by 3,490± of private roadway. The subject parcel is bordered by residential properties to the east, undeveloped land north and south and a combination of residential and commercial properties to the west. The subject parcels are known as Lots 50 and 70 on the Town of Brookline's Assessor's Map D. The site is serviced by overhead electric and an onsite well. The area of disturbance associated with the proposed development is 590,000± Sq.Ft. with an increase of 4.5± acres of impervious area.

The purpose of this report is to analyze the qualitative and quantitative impacts of the proposed development expansion. The objective of the proposed stormwater management system for this project is to mitigate any increases resulting from the proposed development and to meet the drainage guidelines set forth in the Town of Brookline Regulations.

II) SITE DESCRIPTION (EXISTING)

The subject property is currently undeveloped with the exception of an abandoned granite quarry on Lot D-70 and an existing well on the north end of Lot D-50. The drainage analysis is restricted to the northern portion of the parcel where the development is proposed. The site is almost entirely wooded and slopes east to west. The majority of the study area drains to an existing perennial stream that drains to an existing 30' RCP culvert that passes under Route 13 approximately 330 feet south of the proposed site drive. The remainder of the study area drains to several drop inlets located in the existing highway swale along the east side of Route 13. These drop inlets discharge

on the west side of Route 13. The drop inlets and the 30" RCP drain to Scab Mill Brook and a large, 70± acre swamp, west of the site. This is the observation point for the analysis (OP1).
NRCS soil survey maps indicate that the study area consists of three soils consisting of Canton Fine Sandy Loam on the east side of the study area, the majority of the study area consisting of Chatfield-Hollis-Rock Outcrop and Hinckley Loamy Sand on the western fringe of the study area, primarily confined to the Route 13 ROW. The applicant has completed an extensive soil survey of the development area and a site-specific soils map has been compiled for the north end of Lot D-50. The site-specific soils map has identified five soils within the development area. This soils consist of Canton (HSG B), Hollis (HSG D), Newfields (HSG B), and wetland soils consisting of Leicester (HSG C) and Scarboro (HSG D). The majority of the development area consists of the Newfields soil which has a low default infiltration rate 0.6 in./hr. (based on SSSNNE Special Publication #5). After applying a factor of safety of 2, 0.3 in./hr. was used for the design exfiltration rate.

III) METHODOLOGY

The quantity of runoff and the conveyance of that flow through the site are determined using the software package HydroCAD r 10.0 by HydroCAD Software Solutions, LLC. HydroCAD is a computer aided design program for modeling storm water hydrology based on the Soil Conservation Service (SCS) TR-20 method combined with standard hydraulics calculations used to model detention basins and culverts.

Stormwater management systems and erosion control are designed in accordance with the methodology for the "Best Management Practices" (BMP's), as outlined in the New Hampshire Storm Water Manual, Volume 2.

IV) DRAINAGE DESIGN

Town of Brookline Subdivision Regulations require that "*an adequate surface storm water drainage system for the entire subdivision area shall be provided, based upon a 25-year storm event*" and that "*In general, drainage… shall be based on New Hampshire Stormwater Manual for both peak flow rates and volumes*". Accordingly, the proposed drainage system has been designed to accommodate the twenty-five (25) year design storm and maintain the pre-development peak rate of runoff for the two (2) year, ten (10) year, twenty-five (25) year, and fifty (50) year storm events. These design storms have therefore been analyzed to compare the pre and post-development peak flow rates for the site (see attached comparison tables).

<u>Pre-Development Drainage Conditions:</u>
The property is situated into four subcatchments that drain the subject area. The stormwater runoff for Subcatment E1S consists of the north west corner of the parcel which drains to DI-2111 (Pond E1P). Subcatchment E2S consists of the northern portion of the study area and drains to DI-2109 (Pond E2S). Subcatchment E3S is the smallest subcatchment and it drains to DI-2102 (Pond E3P). Finally, the largest if of the pre-development drainage areas, Sub E4S, drains to the existing

30" RCP, Route 13 cross culvert. Without accurate knowledge of what was done to mitigate stormwater runoff from the residential development east of the study area, the watershed draining to the existing 30" RCP was limited to the area downstream of this development

Post-Development Drainage Conditions:
As can be seen on the Post-Development Drainage Plan, the proposed development and associated site improvements will collect the stormwater runoff from the impervious surfaces and direct them to several proposed BMP's in accordance with NHDES, Alteration of Terrain regulations. A combination of open and closed drainage will be utilized to collect stormwater runoff and direct it to five (5) proposed stormwater management areas. The stormwater management areas will mitigate and treat stormwater runoff from the development. The post-development subcatchments generally follow the pre-development subcatchment drainage patterns and are named accordingly. Subcatchment 101 is the remainder of pre-development Subcathment E1S and drains to DI2111 (Pond E1P). The upper, eastern portion of the site (Buildings 18-22) consists of Subcatchments 401-408 which are routed to Infiltration Basin IB401 (Pond 409P) located southwest of the terminus of the main drive. Pretreatment to this basin is provided by a pre-treatment swale (SS-1) **(Env-Wq 1508.14 Pretreatment Practices: Pretreatment Swales)** and stormwater treatment is provided by the required separation to the SHWT **(Env-Wq 1508.07 Stormwater Treatment Practices: Infiltration Practices)**. Subcatchments 201-204 are routed to Infiltration Basin 201 (Pond 203P) located northwest of Building 14. Pretreatment to this basin is provided by a sediment forebay (FB201) **(Env-Wq 1508.12 Pretreatment Practices: Sediment Forebays)**. Subcatchments 205-216 is routed to dry Detention Basin DB201 (Pond 219P) located left of Station 3+00 on the main access drive. Stormwater treatment is provided downstream of this basin in a treatment swale TS-2 (Reach 208R) **(Env-Wq 1508.09 Stormwater Treatment Practices: Treatment Swales).** Subcatchment 217 is the remainder of predevelopment Subcatchment E2S and drains to DI2109 (Pond E2P). Subcatchments 301-303 are routed to dry Detention Basin DB101 located at the right of the entrance to the site. Stormwater treatment is provided upstream of this basin by TS-1 (Reach 301R). Subcatchment 304 is the remainder of predevelopment Subcatchment E3S and drains to DI2102 (Pond E3P). Subcatchments 409-415 are routed to Infiltration Basin 402 (Pond 418P) located northwest of Building 5. Pretreatment to this basin is provided by a sediment forebay (FB401) and stormwater treatment in this basin, as well as infiltration basins 401 and 201 is provided by the required separation to the SHWT **(Env-Wq 1508.07 Stormwater Treatment Practices: Infiltration Practices)**. Finaly, Subcatchment 416 is the remainder of predevelopment Subcatchment E4S and drains to the existing 30" RCP south of the site (Pond E4P). All stormwater runoff from the site drains to a large, 70± acre swamp associated with Scab Mill Brook west of the site. As stated above, this is the observation point for the drainage analysis (OP1).

V) SUMMARY

The intent of the stormwater management system for this project is to address the qualitative and quantitative aspects of the stormwater runoff so that there are no downstream adverse impacts created by the project. To mitigate the resulting increases in peak flow rates and volumes due to

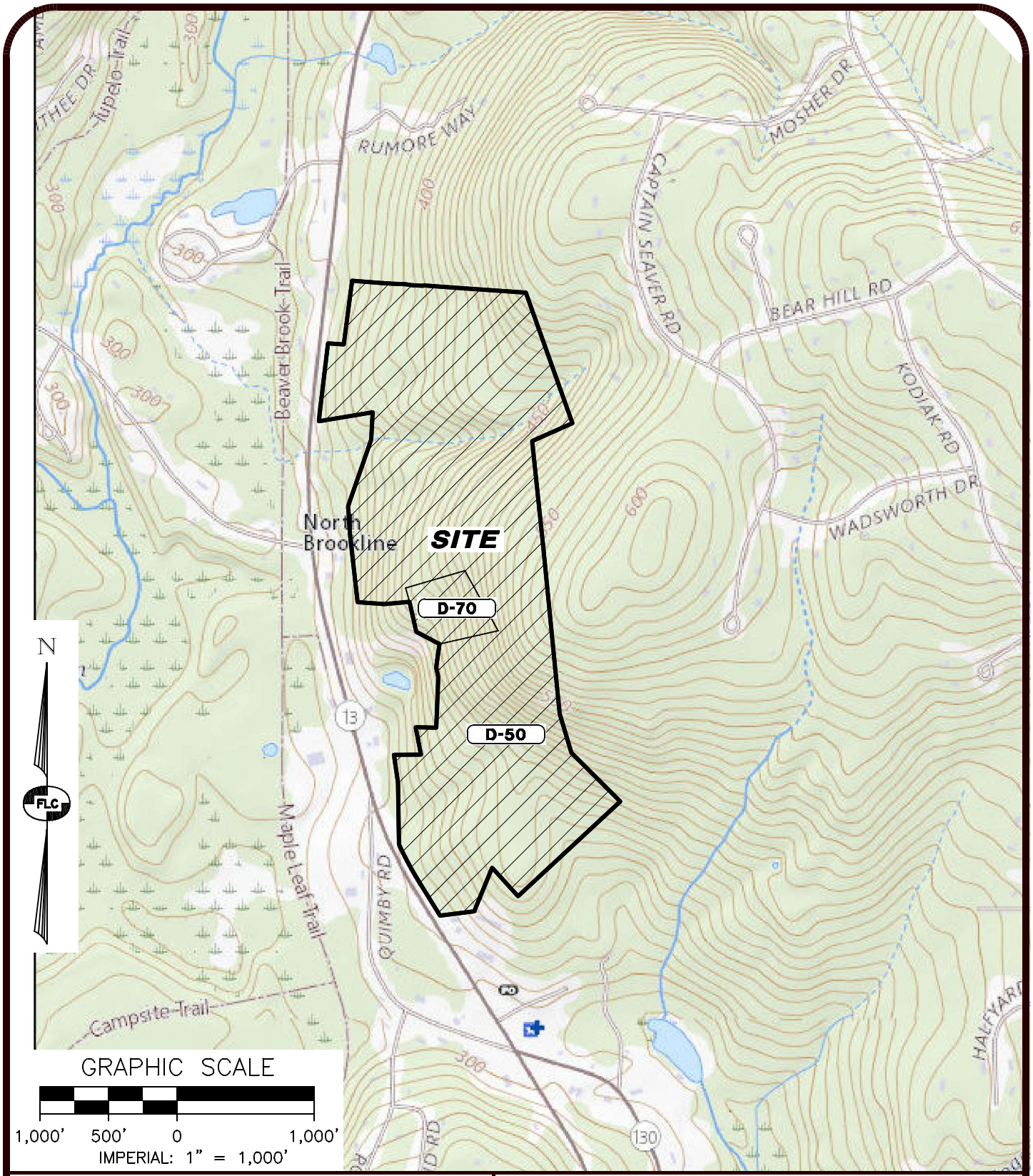
the residential development and associated site improvements for Lot D-50 in accordance with local, state and federal regulations. This project proposes a combination of open and closed drainage to collect the stormwater runoff from the proposed impervious surfaces and route it to five (5) stormwater management area for treatment, groundwater recharge, peak rate and volume mitigation.

The net result is that the proposed development will have no increase in the peak rates/or volume of stormwater runoff leaving the site. The proposed drainage system will contain and mitigate increases in runoff rates for the 2, 10, 25 and 50-year storm events as illustrated in Table 1.1 below.

The following tables are a summary of the attached calculations and show a comparison of the peak flow rates and volumes at the observation points for the site. The values presented are based on pre- and post-development conditions.

Table 1.1: Peak Flow Rates (CFS) to Scab Mill Brook- OP1 with Post-Development Infiltration/Detention

STORM FREQUENCY	PRE-DEV. RUNOFF (CFS)	POST-DEV. RUNOFF (CFS)	CHANGE (CFS)
2-YEAR	2.46	2.03	-0.43
10-YEAR	19.66	15.16	-4.50
25-YEAR	35.30	27.67	-7.63
50-YEAR	48.84	38.52	-10.32



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USGS MAP

MAP D, LOTS 50 & 70
N.H. ROUTE 13
BROOKLINE, NEW HAMPSHIRE

SCALE: 1" = 1,000' MARCH 18, 2024

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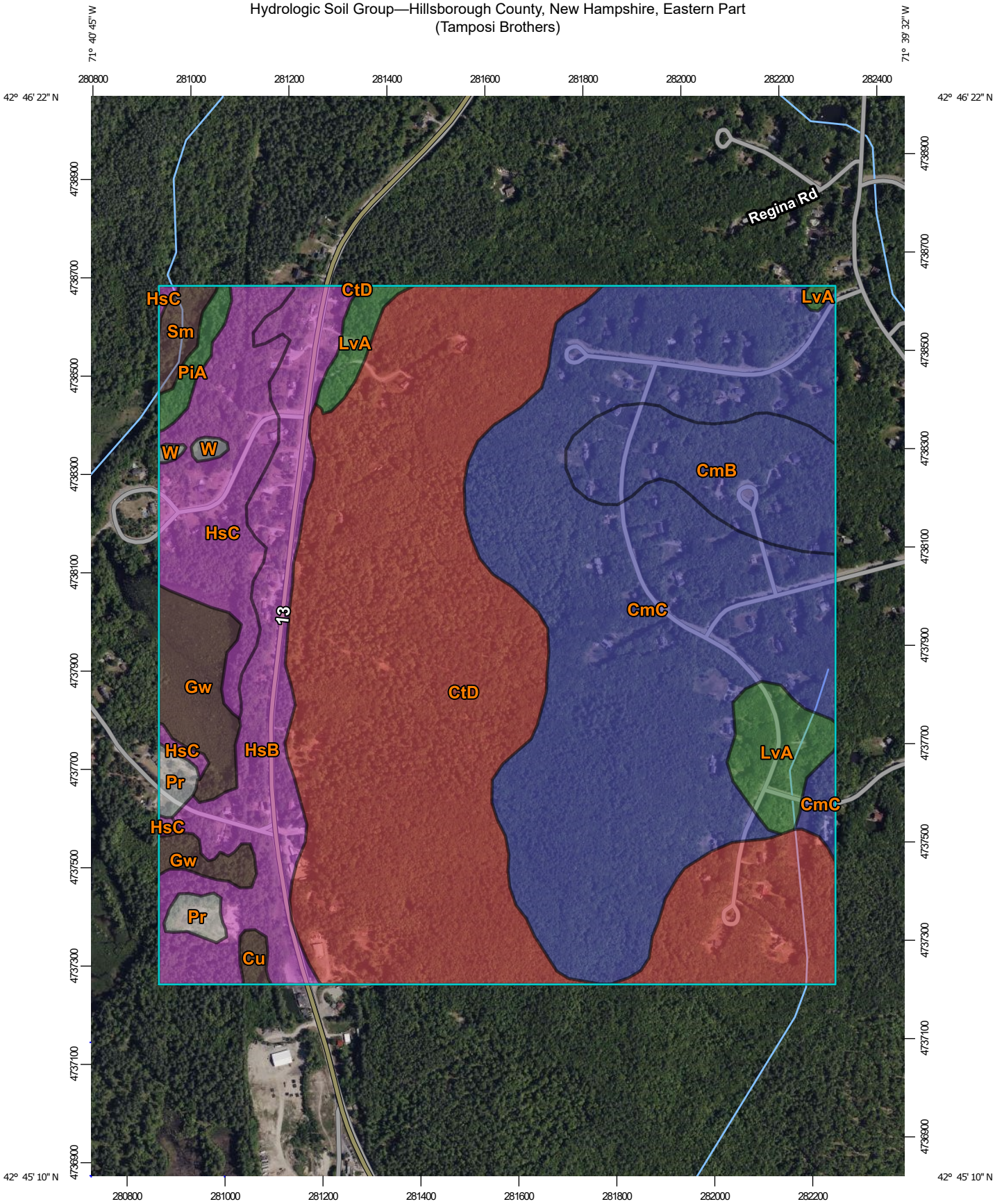
Hydrologic Soil Group—Hillsborough County, New Hampshire, Eastern Part
(Tamposi Brothers)



Map Scale: 1:10,700 if printed on A portrait (8.5" x 11") sheet.

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Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hillsborough County, New Hampshire, Eastern Part
Survey Area Data: Version 26, Aug 22, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CmB	Canton fine sandy loam, 0 to 8 percent slopes, very stony	B	26.8	5.5%
CmC	Canton fine sandy loam, 8 to 15 percent slopes, very stony	B	164.1	33.7%
CtD	Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes	D	175.5	36.0%
Cu	Swansea mucky peat, 0 to 2 percent slopes	B/D	1.4	0.3%
Gw	Freetown mucky peat, 0 to 2 percent slopes	B/D	15.6	3.2%
HsB	Hinckley loamy sand, 3 to 8 percent slopes	A	44.9	9.2%
HsC	Hinckley loamy sand, 8 to 15 percent slopes	A	30.7	6.3%
LvA	Leicester-Walpole complex stony, 0 to 3 percent slopes	A/D	15.6	3.2%
PiA	Pipestone loamy sand, 0 to 3 percent slopes	A/D	3.2	0.7%
Pr	Pits, gravel		4.4	0.9%
Sm	Saco variant silt loam	B/D	3.5	0.7%
W	Water (less than 40 acres)		1.1	0.2%
Totals for Area of Interest			**486.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

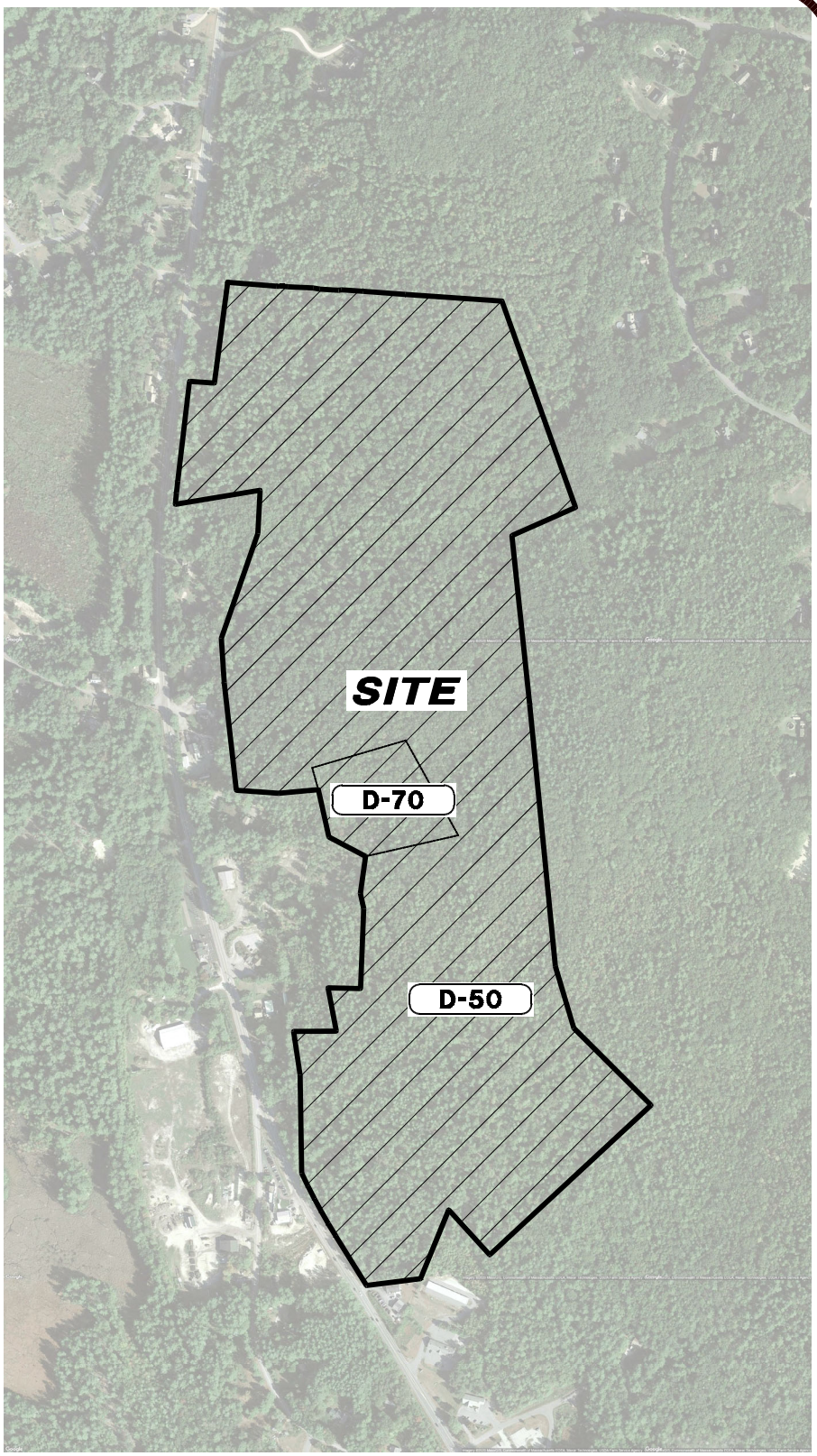
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



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GRAPHIC SCALE

800' 400' 0 800'

IMPERIAL: 1" = 800'

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AERIAL MAP

MAP D, LOTS 50 & 70
N.H. ROUTE 13
BROOKLINE, NEW HAMPSHIRE

SCALE: 1" = 800' MARCH 18, 2024

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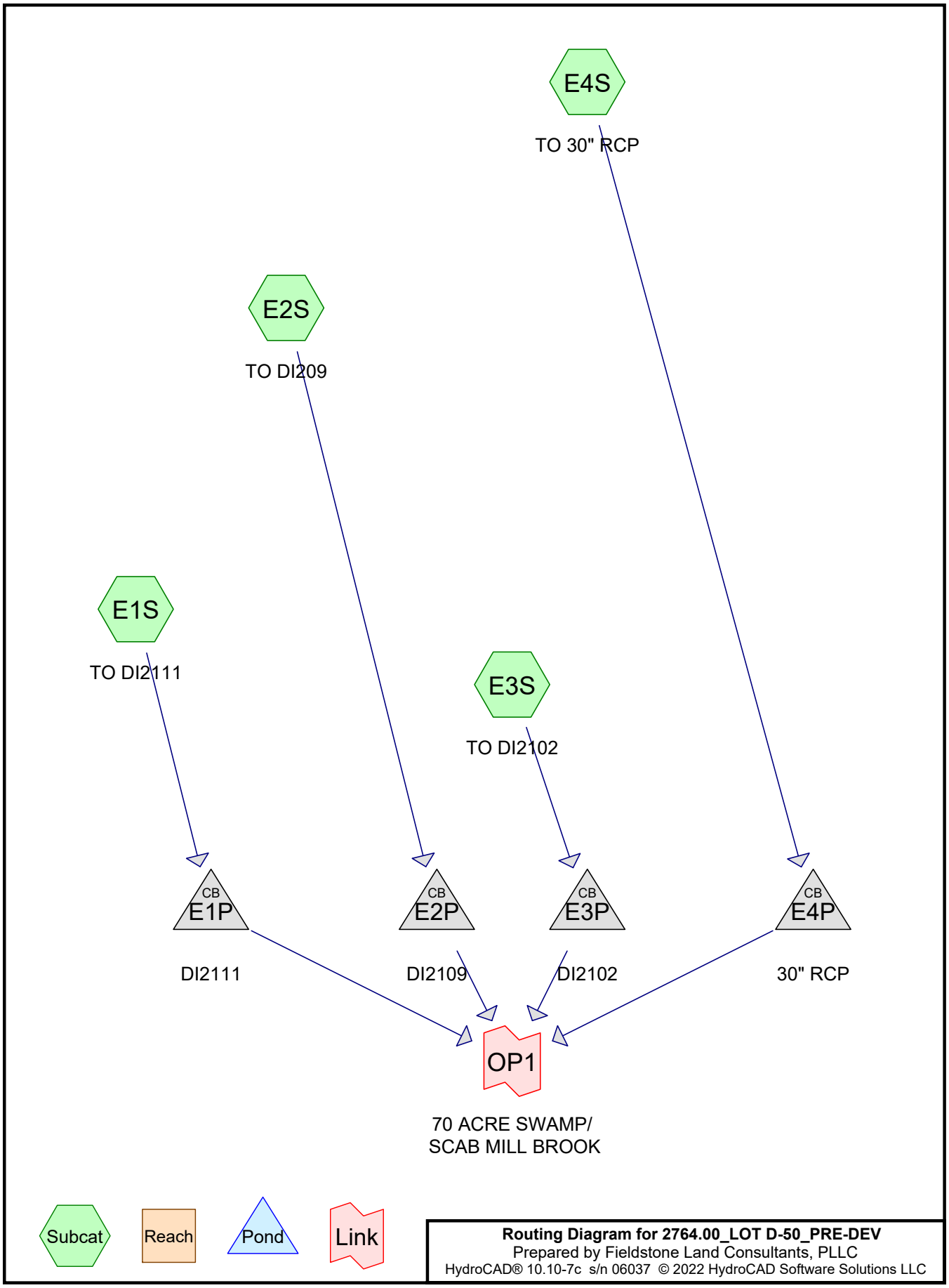
Section 1.1

Existing Conditions

2, 25 & 50 Year Storm Node List



Routing Diagram for 2764.00_LOT D-50_PRE-DEV
Prepared by Fieldstone Land Consultants, PLLC
HydroCAD® 10.10-7c s/n 06037 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.833	39	>75% Grass cover, Good, HSG A (E1S, E2S, E3S, E4S)
1.265	61	>75% Grass cover, Good, HSG B (E1S, E3S, E4S)
0.654	98	Paved parking, HSG A (E1S, E2S, E3S, E4S)
0.087	98	Paved parking, HSG B (E1S, E4S)
0.048	98	Roofs, HSG B (E1S)
0.190	30	Woods, Good, HSG A (E4S)
61.215	55	Woods, Good, HSG B (E1S, E2S, E3S, E4S)
0.065	70	Woods, Good, HSG C (E2S, E4S)
0.426	77	Woods, Good, HSG D (E2S, E3S, E4S)
64.783	**56**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.677	HSG A	E1S, E2S, E3S, E4S
62.614	HSG B	E1S, E2S, E3S, E4S
0.065	HSG C	E2S, E4S
0.426	HSG D	E2S, E3S, E4S
0.000	Other	
64.783		**TOTAL AREA**

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1S: TO DI2111 Runoff Area=139,210 sf 5.47% Impervious Runoff Depth>0.24"
Flow Length=770' Tc=13.8 min CN=58 Runoff=0.31 cfs 0.064 af

Subcatchment E2S: TO DI209 Runoff Area=658,480 sf 0.83% Impervious Runoff Depth>0.17"
Flow Length=2,310' Tc=36.0 min CN=55 Runoff=0.53 cfs 0.209 af

Subcatchment E3S: TO DI2102 Runoff Area=66,290 sf 8.72% Impervious Runoff Depth>0.24"
Flow Length=496' Tc=8.8 min CN=58 Runoff=0.16 cfs 0.031 af

Subcatchment E4S: TO 30" RCP Runoff Area=1,957,950 sf 0.79% Impervious Runoff Depth>0.17"
Flow Length=3,260' Tc=29.7 min CN=55 Runoff=1.71 cfs 0.623 af

Pond E1P: DI2111 Peak Elev=312.25' Inflow=0.31 cfs 0.064 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=0.31 cfs 0.064 af

Pond E2P: DI2109 Peak Elev=308.34' Inflow=0.53 cfs 0.209 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=0.53 cfs 0.209 af

Pond E3P: DI2102 Peak Elev=304.17' Inflow=0.16 cfs 0.031 af
15.0" Round Culvert n=0.013 L=300.0' S=0.0100 '/' Outflow=0.16 cfs 0.031 af

Pond E4P: 30" RCP Peak Elev=295.15' Inflow=1.71 cfs 0.623 af
30.0" Round Culvert n=0.012 L=63.0' S=0.0540 '/' Outflow=1.71 cfs 0.623 af

Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK Inflow=2.46 cfs 0.926 af
Primary=2.46 cfs 0.926 af

Total Runoff Area = 64.783 ac Runoff Volume = 0.926 af Average Runoff Depth = 0.17"
98.78% Pervious = 63.994 ac 1.22% Impervious = 0.789 ac

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1S: TO DI2111 Runoff Area=139,210 sf 5.47% Impervious Runoff Depth>1.22"
Flow Length=770' Tc=13.8 min CN=58 Runoff=3.08 cfs 0.325 af

Subcatchment E2S: TO DI209 Runoff Area=658,480 sf 0.83% Impervious Runoff Depth>1.02"
Flow Length=2,310' Tc=36.0 min CN=55 Runoff=7.80 cfs 1.282 af

Subcatchment E3S: TO DI2102 Runoff Area=66,290 sf 8.72% Impervious Runoff Depth>1.22"
Flow Length=496' Tc=8.8 min CN=58 Runoff=1.72 cfs 0.155 af

Subcatchment E4S: TO 30" RCP Runoff Area=1,957,950 sf 0.79% Impervious Runoff Depth>1.02"
Flow Length=3,260' Tc=29.7 min CN=55 Runoff=25.31 cfs 3.820 af

Pond E1P: DI2111 Peak Elev=312.91' Inflow=3.08 cfs 0.325 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=3.08 cfs 0.325 af

Pond E2P: DI2109 Peak Elev=311.12' Inflow=7.80 cfs 1.282 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=7.80 cfs 1.282 af

Pond E3P: DI2102 Peak Elev=304.64' Inflow=1.72 cfs 0.155 af
15.0" Round Culvert n=0.013 L=300.0' S=0.0100 '/' Outflow=1.72 cfs 0.155 af

Pond E4P: 30" RCP Peak Elev=296.70' Inflow=25.31 cfs 3.820 af
30.0" Round Culvert n=0.012 L=63.0' S=0.0540 '/' Outflow=25.31 cfs 3.820 af

Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK Inflow=35.30 cfs 5.582 af
Primary=35.30 cfs 5.582 af

Total Runoff Area = 64.783 ac Runoff Volume = 5.582 af Average Runoff Depth = 1.03"
98.78% Pervious = 63.994 ac 1.22% Impervious = 0.789 ac

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1S: TO DI2111 Runoff Area=139,210 sf 5.47% Impervious Runoff Depth>1.57"
Flow Length=770' Tc=13.8 min CN=58 Runoff=4.15 cfs 0.417 af

Subcatchment E2S: TO DI209 Runoff Area=658,480 sf 0.83% Impervious Runoff Depth>1.33"
Flow Length=2,310' Tc=36.0 min CN=55 Runoff=10.80 cfs 1.680 af

Subcatchment E3S: TO DI2102 Runoff Area=66,290 sf 8.72% Impervious Runoff Depth>1.57"
Flow Length=496' Tc=8.8 min CN=58 Runoff=2.31 cfs 0.199 af

Subcatchment E4S: TO 30" RCP Runoff Area=1,957,950 sf 0.79% Impervious Runoff Depth>1.34"
Flow Length=3,260' Tc=29.7 min CN=55 Runoff=35.09 cfs 5.004 af

Pond E1P: DI2111 Peak Elev=313.11' Inflow=4.15 cfs 0.417 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=4.15 cfs 0.417 af

Pond E2P: DI2109 Peak Elev=314.66' Inflow=10.80 cfs 1.680 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=10.80 cfs 1.680 af

Pond E3P: DI2102 Peak Elev=304.76' Inflow=2.31 cfs 0.199 af
15.0" Round Culvert n=0.013 L=300.0' S=0.0100 '/' Outflow=2.31 cfs 0.199 af

Pond E4P: 30" RCP Peak Elev=297.36' Inflow=35.09 cfs 5.004 af
30.0" Round Culvert n=0.012 L=63.0' S=0.0540 '/' Outflow=35.09 cfs 5.004 af

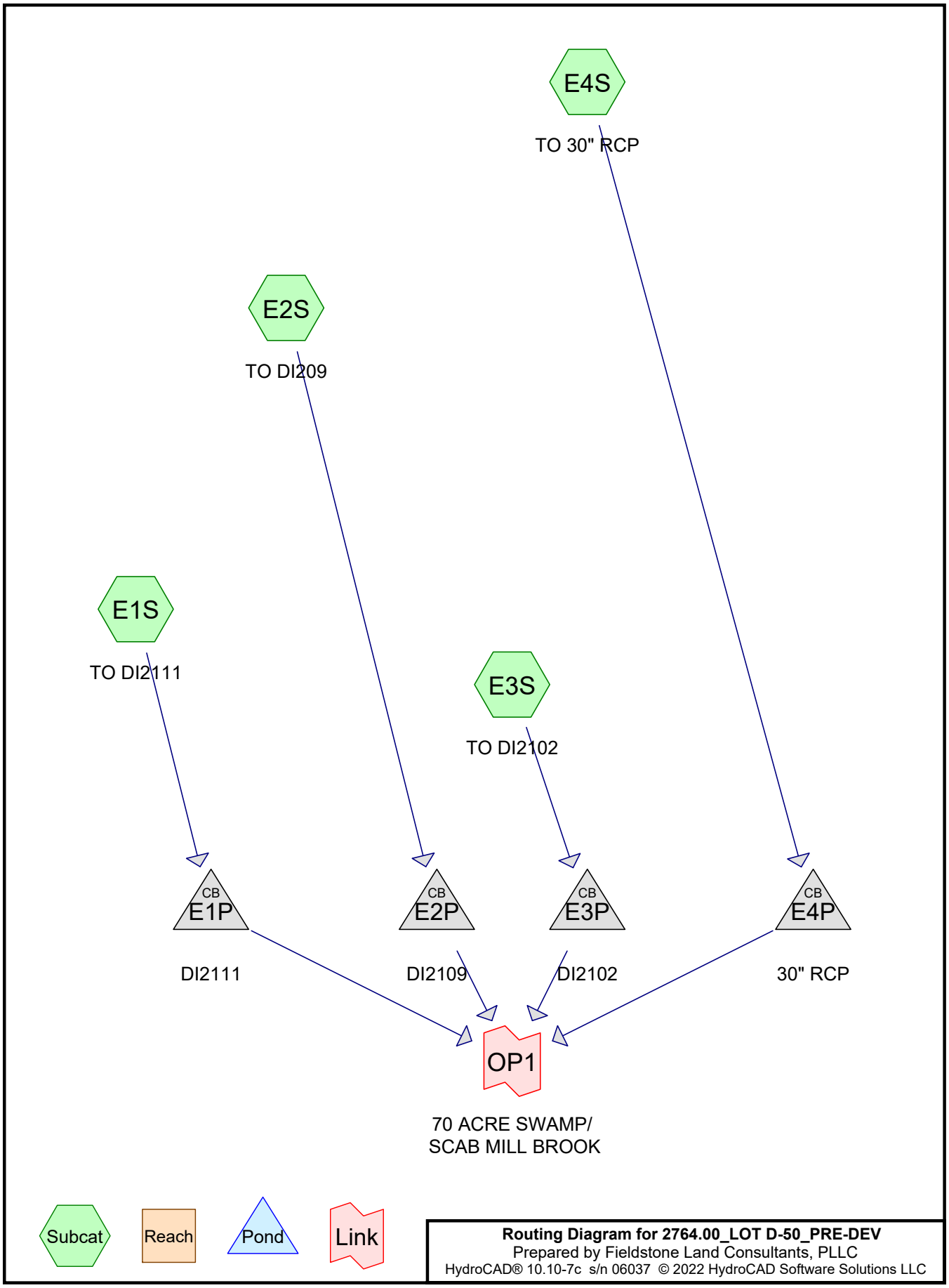
Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK Inflow=48.84 cfs 7.300 af
Primary=48.84 cfs 7.300 af

Total Runoff Area = 64.783 ac Runoff Volume = 7.300 af Average Runoff Depth = 1.35"
98.78% Pervious = 63.994 ac 1.22% Impervious = 0.789 ac

Section 1.2

Existing Conditions

10 Year Storm Full Summary



Routing Diagram for 2764.00_LOT D-50_PRE-DEV
Prepared by Fieldstone Land Consultants, PLLC
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Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1S: TO DI2111 Runoff Area=139,210 sf 5.47% Impervious Runoff Depth>0.80"
Flow Length=770' Tc=13.8 min CN=58 Runoff=1.81 cfs 0.214 af

Subcatchment E2S: TO DI209 Runoff Area=658,480 sf 0.83% Impervious Runoff Depth>0.65"
Flow Length=2,310' Tc=36.0 min CN=55 Runoff=4.34 cfs 0.813 af

Subcatchment E3S: TO DI2102 Runoff Area=66,290 sf 8.72% Impervious Runoff Depth>0.80"
Flow Length=496' Tc=8.8 min CN=58 Runoff=1.01 cfs 0.102 af

Subcatchment E4S: TO 30" RCP Runoff Area=1,957,950 sf 0.79% Impervious Runoff Depth>0.65"
Flow Length=3,260' Tc=29.7 min CN=55 Runoff=14.03 cfs 2.423 af

Pond E1P: DI2111 Peak Elev=312.66' Inflow=1.81 cfs 0.214 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=1.81 cfs 0.214 af

Pond E2P: DI2109 Peak Elev=309.16' Inflow=4.34 cfs 0.813 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=4.34 cfs 0.813 af

Pond E3P: DI2102 Peak Elev=304.48' Inflow=1.01 cfs 0.102 af
15.0" Round Culvert n=0.013 L=300.0' S=0.0100 '/' Outflow=1.01 cfs 0.102 af

Pond E4P: 30" RCP Peak Elev=296.09' Inflow=14.03 cfs 2.423 af
30.0" Round Culvert n=0.012 L=63.0' S=0.0540 '/' Outflow=14.03 cfs 2.423 af

Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK Inflow=19.66 cfs 3.551 af
Primary=19.66 cfs 3.551 af

Total Runoff Area = 64.783 ac Runoff Volume = 3.551 af Average Runoff Depth = 0.66"
98.78% Pervious = 63.994 ac 1.22% Impervious = 0.789 ac

Summary for Subcatchment E1S: TO DI2111

Runoff = 1.81 cfs @ 12.23 hrs, Volume= 0.214 af, Depth> 0.80"
Routed to Pond E1P : DI2111

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
3,660	98	Paved parking, HSG A
1,860	98	Paved parking, HSG B
2,090	98	Roofs, HSG B
3,140	39	>75% Grass cover, Good, HSG A
17,230	61	>75% Grass cover, Good, HSG B
111,230	55	Woods, Good, HSG B
139,210	58	Weighted Average
131,600		94.53% Pervious Area
7,610		5.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	70	0.2300	0.18		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
7.4	700	0.1000	1.58		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
13.8	770	Total			

Summary for Subcatchment E2S: TO DI209

Runoff = 4.34 cfs @ 12.64 hrs, Volume= 0.813 af, Depth> 0.65"
Routed to Pond E2P : DI2109

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
5,470	98	Paved parking, HSG A
6,630	39	>75% Grass cover, Good, HSG A
639,040	55	Woods, Good, HSG B
980	70	Woods, Good, HSG C
6,360	77	Woods, Good, HSG D
658,480	55	Weighted Average
653,010		99.17% Pervious Area
5,470		0.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
20.2	2,100	0.1200	1.73		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	110	0.0140	8.27	628.48	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=3.00' D=4.00' Z= 4.0 '/' Top.W=35.00' n= 0.035 High grass
36.0	2,310	Total			

Summary for Subcatchment E3S: TO DI2102

Runoff = 1.01 cfs @ 12.15 hrs, Volume= 0.102 af, Depth> 0.80"
Routed to Pond E3P : DI2102

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
5,780	98	Paved parking, HSG A
9,000	39	>75% Grass cover, Good, HSG A
7,000	61	>75% Grass cover, Good, HSG B
43,420	55	Woods, Good, HSG B
1,090	77	Woods, Good, HSG D
66,290	58	Weighted Average
60,510		91.28% Pervious Area
5,780		8.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	47	0.1333	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
2.5	285	0.1440	1.90		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	164	0.0160	5.66	113.17	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=2.00' Z= 4.0 '/' Top.W=18.00' n= 0.035 High grass
8.8	496	Total			

Summary for Subcatchment E4S: TO 30" RCP

Runoff = 14.03 cfs @ 12.54 hrs, Volume= 2.423 af, Depth> 0.65"
Routed to Pond E4P : 30" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
13,580	98	Paved parking, HSG A
17,520	39	>75% Grass cover, Good, HSG A
8,270	30	Woods, Good, HSG A
30,855	61	>75% Grass cover, Good, HSG B
1,920	98	Paved parking, HSG B
1,865	70	Woods, Good, HSG C
1,872,830	55	Woods, Good, HSG B
11,110	77	Woods, Good, HSG D
1,957,950	55	Weighted Average
1,942,450		99.21% Pervious Area
15,500		0.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
10.2	1,060	0.1200	1.73		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
3.9	2,100	0.0780	9.07	362.77	**Parabolic Channel, C-D** W=20.00' D=3.00' Area=40.0 sf Perim=21.1' n= 0.070 Mountain streams w/large boulders
29.7	3,260	Total			

Summary for Pond E1P: DI2111

Inflow Area = 3.196 ac, 5.47% Impervious, Inflow Depth > 0.80" for 10-Year event
Inflow = 1.81 cfs @ 12.23 hrs, Volume= 0.214 af
Outflow = 1.81 cfs @ 12.23 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.0 min
Primary = 1.81 cfs @ 12.23 hrs, Volume= 0.214 af
Routed to Link OP1 : 70 ACRE SWAMP/ SCAB MILL BROOK

Routing by Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 312.66' @ 12.23 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	312.00'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 312.00' / 310.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.81 cfs @ 12.23 hrs HW=312.66' (Free Discharge)
└**1=Culvert** (Inlet Controls 1.81 cfs @ 2.76 fps)

Summary for Pond E2P: DI2109

Inflow Area = 15.117 ac, 0.83% Impervious, Inflow Depth > 0.65" for 10-Year event
Inflow = 4.34 cfs @ 12.64 hrs, Volume= 0.813 af
Outflow = 4.34 cfs @ 12.64 hrs, Volume= 0.813 af, Atten= 0%, Lag= 0.0 min
Primary = 4.34 cfs @ 12.64 hrs, Volume= 0.813 af
Routed to Link OP1 : 70 ACRE SWAMP/ SCAB MILL BROOK

Routing by Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 309.16' @ 12.64 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	308.00'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 308.00' / 306.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.34 cfs @ 12.64 hrs HW=309.16' (Free Discharge)
└**1=Culvert** (Inlet Controls 4.34 cfs @ 3.66 fps)

Summary for Pond E3P: DI2102

Inflow Area = 1.522 ac, 8.72% Impervious, Inflow Depth > 0.80" for 10-Year event
Inflow = 1.01 cfs @ 12.15 hrs, Volume= 0.102 af
Outflow = 1.01 cfs @ 12.15 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.01 cfs @ 12.15 hrs, Volume= 0.102 af
Routed to Link OP1 : 70 ACRE SWAMP/ SCAB MILL BROOK

Routing by Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 304.48' @ 12.15 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	304.00'	**15.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 304.00' / 301.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.00 cfs @ 12.15 hrs HW=304.47' (Free Discharge)
└**1=Culvert** (Inlet Controls 1.00 cfs @ 2.34 fps)

Summary for Pond E4P: 30" RCP

Inflow Area = 44.948 ac, 0.79% Impervious, Inflow Depth > 0.65" for 10-Year event
Inflow = 14.03 cfs @ 12.54 hrs, Volume= 2.423 af
Outflow = 14.03 cfs @ 12.54 hrs, Volume= 2.423 af, Atten= 0%, Lag= 0.0 min
Primary = 14.03 cfs @ 12.54 hrs, Volume= 2.423 af
Routed to Link OP1 : 70 ACRE SWAMP/ SCAB MILL BROOK

Routing by Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 296.09' @ 12.54 hrs
Flood Elev= 301.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.70'	**30.0" Round Culvert** L= 63.0' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 294.70' / 291.30' S= 0.0540 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 4.91 sf

Primary OutFlow Max=14.03 cfs @ 12.54 hrs HW=296.09' (Free Discharge)
└─**1=Culvert** (Inlet Controls 14.03 cfs @ 5.01 fps)

Summary for Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK

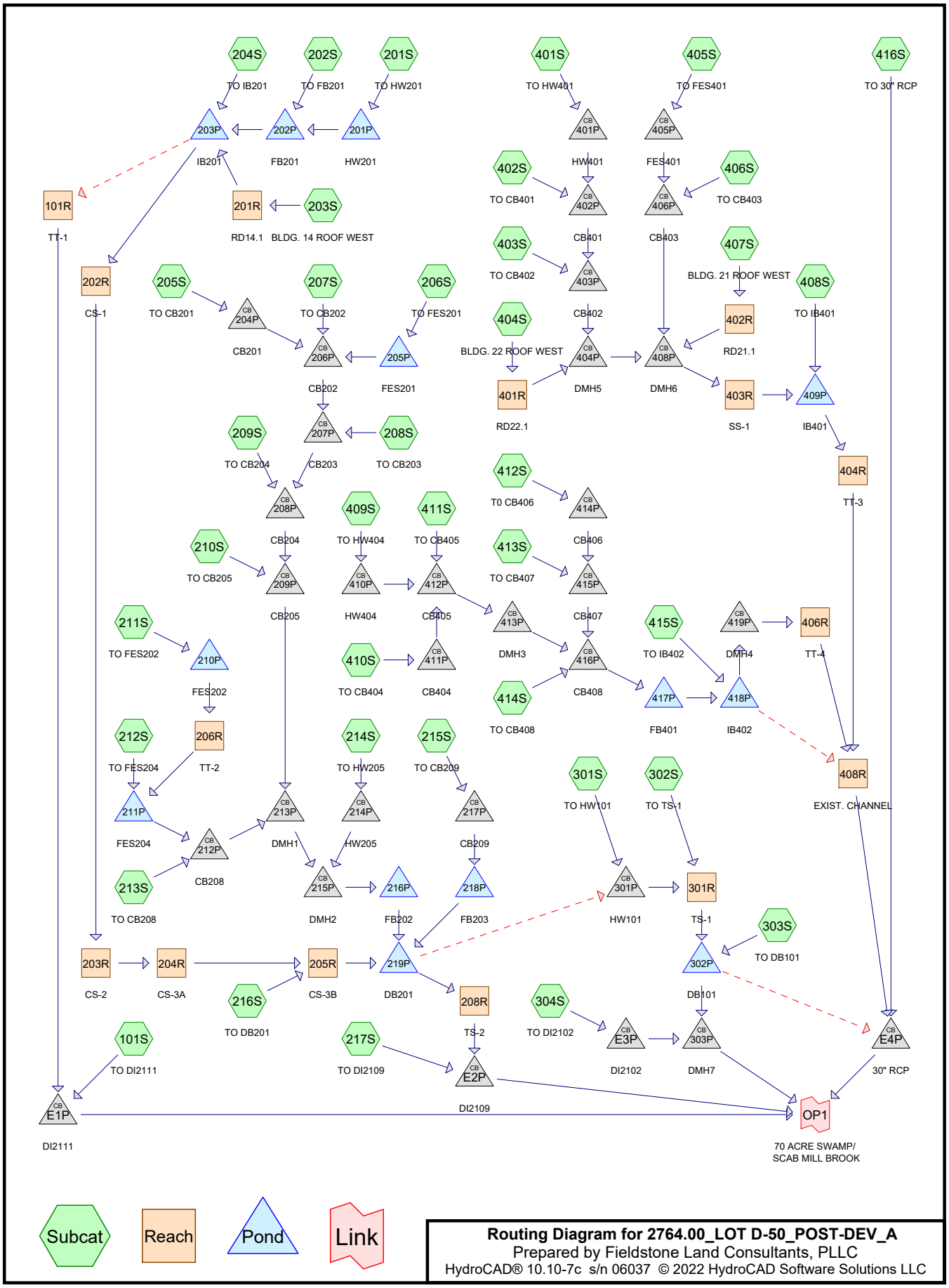
Inflow Area = 64.783 ac, 1.22% Impervious, Inflow Depth > 0.66" for 10-Year event
Inflow = 19.66 cfs @ 12.54 hrs, Volume= 3.551 af
Primary = 19.66 cfs @ 12.54 hrs, Volume= 3.551 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Section 2.1

Proposed Conditions

2, 25, 50 Year Storm Node List



Routing Diagram for 2764.00_LOT D-50_POST-DEV_A
Prepared by Fieldstone Land Consultants, PLLC
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.811	39	>75% Grass cover, Good, HSG A (101S, 217S, 303S, 304S, 416S)
12.757	61	>75% Grass cover, Good, HSG B (101S, 201S, 202S, 204S, 205S, 206S, 207S, 208S, 209S, 210S, 211S, 212S, 213S, 214S, 215S, 216S, 217S, 301S, 302S, 303S, 304S, 401S, 402S, 403S, 405S, 406S, 408S, 409S, 410S, 411S, 412S, 413S, 414S, 415S, 416S)
0.101	80	>75% Grass cover, Good, HSG D (215S, 410S, 411S, 412S, 413S, 414S)
0.676	98	Paved parking, HSG A (101S, 217S, 303S, 304S, 416S)
3.119	98	Paved parking, HSG B (101S, 201S, 202S, 205S, 206S, 207S, 208S, 209S, 210S, 211S, 212S, 213S, 214S, 215S, 216S, 301S, 302S, 303S, 304S, 402S, 403S, 406S, 408S, 409S, 410S, 411S, 413S, 414S, 416S)
0.162	98	Paved parking, HSG D (410S, 411S, 413S, 414S)
0.583	98	Roofs, HSG B (101S, 203S, 205S, 207S, 209S, 213S, 402S, 403S, 404S, 406S, 407S, 410S, 411S, 413S, 414S)
0.048	98	Roofs, HSG D (410S, 411S)
0.651	98	Unconnected roofs, HSG B (202S, 206S, 211S, 212S, 214S, 215S, 216S, 401S, 405S, 412S, 415S)
0.040	98	Unconnected roofs, HSG D (215S, 412S)
0.190	30	Woods, Good, HSG A (416S)
45.505	55	Woods, Good, HSG B (101S, 201S, 202S, 204S, 206S, 211S, 212S, 214S, 215S, 216S, 217S, 302S, 303S, 304S, 401S, 405S, 408S, 412S, 415S, 416S)
0.065	70	Woods, Good, HSG C (216S, 416S)
0.076	77	Woods, Good, HSG D (416S)
64.783	**59**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.677	HSG A	101S, 217S, 303S, 304S, 416S
62.614	HSG B	101S, 201S, 202S, 203S, 204S, 205S, 206S, 207S, 208S, 209S, 210S, 211S, 212S, 213S, 214S, 215S, 216S, 217S, 301S, 302S, 303S, 304S, 401S, 402S, 403S, 404S, 405S, 406S, 407S, 408S, 409S, 410S, 411S, 412S, 413S, 414S, 415S, 416S
0.065	HSG C	216S, 416S
0.426	HSG D	215S, 410S, 411S, 412S, 413S, 414S, 416S
0.000	Other	
64.783		**TOTAL AREA**

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment101S: TO DI2111 Runoff Area=98,470 sf 7.73% Impervious Runoff Depth>0.27"
Flow Length=770' Tc=13.8 min CN=59 Runoff=0.26 cfs 0.050 af

Subcatchment201S: TO HW201 Runoff Area=11,860 sf 25.89% Impervious Runoff Depth>0.62"
Tc=6.0 min CN=69 Runoff=0.16 cfs 0.014 af

Subcatchment202S: TO FB201 Runoff Area=269,260 sf 3.65% Impervious Runoff Depth>0.21"
Flow Length=1,420' Tc=25.9 min UI Adjusted CN=57 Runoff=0.41 cfs 0.110 af

Subcatchment203S: BLDG. 14 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment204S: TO IB201 Runoff Area=59,400 sf 0.00% Impervious Runoff Depth>0.19"
Flow Length=539' Tc=14.0 min CN=56 Runoff=0.09 cfs 0.022 af

Subcatchment205S: TO CB201 Runoff Area=13,300 sf 81.28% Impervious Runoff Depth>1.98"
Tc=6.0 min CN=91 Runoff=0.70 cfs 0.050 af

Subcatchment206S: TO FES201 Runoff Area=35,280 sf 17.55% Impervious Runoff Depth>0.46"
Flow Length=238' Tc=7.0 min UI Adjusted CN=65 Runoff=0.29 cfs 0.031 af

Subcatchment207S: TO CB202 Runoff Area=12,730 sf 84.17% Impervious Runoff Depth>2.06"
Tc=6.0 min CN=92 Runoff=0.69 cfs 0.050 af

Subcatchment208S: TO CB203 Runoff Area=1,525 sf 66.89% Impervious Runoff Depth>1.58"
Tc=6.0 min CN=86 Runoff=0.06 cfs 0.005 af

Subcatchment209S: TO CB204 Runoff Area=5,745 sf 79.81% Impervious Runoff Depth>1.98"
Tc=6.0 min CN=91 Runoff=0.30 cfs 0.022 af

Subcatchment210S: TO CB205 Runoff Area=4,970 sf 29.78% Impervious Runoff Depth>0.75"
Tc=6.0 min CN=72 Runoff=0.09 cfs 0.007 af

Subcatchment211S: TO FES202 Runoff Area=49,550 sf 28.51% Impervious Runoff Depth>0.62"
Flow Length=297' Tc=7.0 min UI Adjusted CN=69 Runoff=0.66 cfs 0.058 af

Subcatchment212S: TO FES204 Runoff Area=56,865 sf 39.00% Impervious Runoff Depth>0.84"
Flow Length=244' Tc=7.0 min CN=74 Runoff=1.15 cfs 0.092 af

Subcatchment213S: TO CB208 Runoff Area=11,165 sf 85.80% Impervious Runoff Depth>2.16"
Tc=6.0 min CN=93 Runoff=0.63 cfs 0.046 af

Subcatchment214S: TO HW205 Runoff Area=18,535 sf 26.60% Impervious Runoff Depth>0.62"
Tc=6.0 min UI Adjusted CN=69 Runoff=0.26 cfs 0.022 af

Subcatchment215S: TO CB209 Runoff Area=31,940 sf 12.40% Impervious Runoff Depth>0.42"
Tc=6.0 min CN=64 Runoff=0.24 cfs 0.026 af

Subcatchment 216S: TO DB201 Runoff Area=91,260 sf 12.17% Impervious Runoff Depth>0.46"
Flow Length=940' Tc=11.2 min CN=65 Runoff=0.66 cfs 0.080 af

Subcatchment 217S: TO DI2109 Runoff Area=59,690 sf 9.16% Impervious Runoff Depth>0.24"
Flow Length=420' Tc=10.4 min CN=58 Runoff=0.14 cfs 0.028 af

Subcatchment 301S: TO HW101 Runoff Area=8,820 sf 26.42% Impervious Runoff Depth>0.70"
Tc=6.0 min CN=71 Runoff=0.15 cfs 0.012 af

Subcatchment 302S: TO TS-1 Runoff Area=25,690 sf 9.19% Impervious Runoff Depth>0.36"
Flow Length=276' Tc=8.8 min CN=62 Runoff=0.12 cfs 0.018 af

Subcatchment 303S: TO DB101 Runoff Area=35,390 sf 5.43% Impervious Runoff Depth>0.24"
Flow Length=317' Tc=7.8 min CN=58 Runoff=0.08 cfs 0.016 af

Subcatchment 304S: TO DI2102 Runoff Area=28,310 sf 24.73% Impervious Runoff Depth>0.39"
Flow Length=213' Tc=8.2 min CN=63 Runoff=0.17 cfs 0.021 af

Subcatchment 401S: TO HW401 Runoff Area=225,780 sf 1.06% Impervious Runoff Depth>0.19"
Flow Length=1,300' Tc=27.5 min CN=56 Runoff=0.26 cfs 0.082 af

Subcatchment 402S: TO CB401 Runoff Area=13,330 sf 80.95% Impervious Runoff Depth>1.98"
Tc=6.0 min CN=91 Runoff=0.70 cfs 0.050 af

Subcatchment 403S: TO CB402 Runoff Area=12,475 sf 85.13% Impervious Runoff Depth>2.06"
Tc=6.0 min CN=92 Runoff=0.68 cfs 0.049 af

Subcatchment 404S: BLDG. 22 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment 405S: TO FES401 Runoff Area=40,315 sf 2.98% Impervious Runoff Depth>0.24"
Flow Length=260' Tc=13.1 min CN=58 Runoff=0.09 cfs 0.019 af

Subcatchment 406S: TO CB403 Runoff Area=6,290 sf 84.90% Impervious Runoff Depth>2.06"
Tc=6.0 min CN=92 Runoff=0.34 cfs 0.025 af

Subcatchment 407S: BLDG. 21 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment 408S: TO IB401 Runoff Area=63,210 sf 4.49% Impervious Runoff Depth>0.27"
Flow Length=76' Tc=8.5 min CN=59 Runoff=0.18 cfs 0.032 af

Subcatchment 409S: TO HW404 Runoff Area=8,990 sf 32.04% Impervious Runoff Depth>0.80"
Tc=6.0 min CN=73 Runoff=0.18 cfs 0.014 af

Subcatchment 410S: TO CB404 Runoff Area=11,390 sf 84.37% Impervious Runoff Depth>2.16"
Tc=6.0 min CN=93 Runoff=0.64 cfs 0.047 af

Subcatchment 411S: TO CB405 Runoff Area=11,930 sf 80.72% Impervious Runoff Depth>2.06"
Tc=6.0 min CN=92 Runoff=0.65 cfs 0.047 af

Subcatchment 412S: T0 CB406 Runoff Area=18,840 sf 13.61% Impervious Runoff Depth>0.46"
Flow Length=382' Tc=8.7 min UI Adjusted CN=65 Runoff=0.15 cfs 0.017 af

Subcatchment 413S: TO CB407 Runoff Area=8,910 sf 62.63% Impervious Runoff Depth>1.65"
Tc=6.0 min CN=87 Runoff=0.40 cfs 0.028 af

Subcatchment 414S: TO CB408 Runoff Area=8,210 sf 82.18% Impervious Runoff Depth>2.06"
Tc=6.0 min CN=92 Runoff=0.45 cfs 0.032 af

Subcatchment 415S: TO IB402 Runoff Area=18,260 sf 7.01% Impervious Runoff Depth>0.36"
Tc=6.0 min UI Adjusted CN=62 Runoff=0.10 cfs 0.013 af

Subcatchment 416S: TO 30" RCP Runoff Area=1,440,650 sf 1.01% Impervious Runoff Depth>0.17"
Flow Length=3,260' Tc=29.7 min CN=55 Runoff=1.26 cfs 0.458 af

Reach 101R: TT-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=680.0' S=0.1176 '/' Capacity=29.75 cfs Outflow=0.00 cfs 0.000 af

Reach 201R: RD14.1 Avg. Flow Depth=0.11' Max Vel=2.36 fps Inflow=0.08 cfs 0.006 af
6.0" Round Pipe n=0.013 L=125.0' S=0.0160 '/' Capacity=0.71 cfs Outflow=0.08 cfs 0.006 af

Reach 202R: CS-1 Avg. Flow Depth=0.04' Max Vel=0.90 fps Inflow=0.07 cfs 0.035 af
n=0.069 L=370.0' S=0.1354 '/' Capacity=53.80 cfs Outflow=0.07 cfs 0.035 af

Reach 203R: CS-2 Avg. Flow Depth=0.04' Max Vel=0.58 fps Inflow=0.07 cfs 0.035 af
n=0.035 L=280.0' S=0.0140 '/' Capacity=52.72 cfs Outflow=0.07 cfs 0.034 af

Reach 204R: CS-3A Avg. Flow Depth=0.05' Max Vel=0.44 fps Inflow=0.07 cfs 0.034 af
n=0.035 L=170.0' S=0.0060 '/' Capacity=34.51 cfs Outflow=0.07 cfs 0.034 af

Reach 205R: CS-3B Avg. Flow Depth=0.15' Max Vel=1.32 fps Inflow=0.66 cfs 0.114 af
n=0.069 L=120.0' S=0.0542 '/' Capacity=42.89 cfs Outflow=0.65 cfs 0.113 af

Reach 206R: TT-2 Avg. Flow Depth=0.22' Max Vel=2.24 fps Inflow=0.66 cfs 0.058 af
n=0.050 L=200.0' S=0.0780 '/' Capacity=69.50 cfs Outflow=0.64 cfs 0.058 af

Reach 208R: TS-2 Avg. Flow Depth=0.26' Max Vel=0.26 fps Inflow=0.47 cfs 0.422 af
n=0.150 L=160.0' S=0.0050 '/' Capacity=5.11 cfs Outflow=0.47 cfs 0.417 af

Reach 301R: TS-1 Avg. Flow Depth=0.12' Max Vel=0.81 fps Inflow=0.25 cfs 0.029 af
n=0.035 L=160.0' S=0.0075 '/' Capacity=13.09 cfs Outflow=0.23 cfs 0.029 af

Reach 401R: RD22.1 Avg. Flow Depth=0.11' Max Vel=2.56 fps Inflow=0.08 cfs 0.006 af
6.0" Round Pipe n=0.013 L=105.0' S=0.0200 '/' Capacity=0.79 cfs Outflow=0.08 cfs 0.006 af

Reach 402R: RD21.1 Avg. Flow Depth=0.09' Max Vel=2.95 fps Inflow=0.08 cfs 0.006 af
6.0" Round Pipe n=0.013 L=123.0' S=0.0301 '/' Capacity=0.97 cfs Outflow=0.08 cfs 0.006 af

Reach 403R: SS-1 Avg. Flow Depth=0.25' Max Vel=1.53 fps Inflow=1.88 cfs 0.237 af
n=0.035 L=120.0' S=0.0100 '/' Capacity=95.96 cfs Outflow=1.85 cfs 0.237 af

Reach 404R: TT-3 Avg. Flow Depth=0.10' Max Vel=1.60 fps Inflow=0.20 cfs 0.111 af
n=0.050 L=465.0' S=0.1118 '/' Capacity=29.00 cfs Outflow=0.20 cfs 0.111 af

Reach 406R: TT-4 Avg. Flow Depth=0.08' Max Vel=0.82 fps Inflow=0.10 cfs 0.053 af
n=0.070 L=160.0' S=0.0750 '/' Capacity=23.05 cfs Outflow=0.10 cfs 0.053 af

Reach 408R: EXIST. CHANNEL Avg. Flow Depth=0.08' Max Vel=1.44 fps Inflow=0.29 cfs 0.164 af
n=0.040 L=546.0' S=0.0769 '/' Capacity=327.19 cfs Outflow=0.29 cfs 0.163 af

Pond 201P: HW201 Peak Elev=399.19' Storage=12 cf Inflow=0.16 cfs 0.014 af
15.0" Round Culvert n=0.013 L=90.0' S=0.0080 '/' Outflow=0.16 cfs 0.014 af

Pond 202P: FB201 Peak Elev=396.02' Storage=850 cf Inflow=0.45 cfs 0.124 af
Outflow=0.39 cfs 0.105 af

Pond 203P: IB201 Peak Elev=395.03' Storage=3,252 cf Inflow=0.45 cfs 0.133 af
Discarded=0.02 cfs 0.025 af Primary=0.07 cfs 0.035 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.060 af

Pond 204P: CB201 Peak Elev=391.41' Inflow=0.70 cfs 0.050 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0150 '/' Outflow=0.70 cfs 0.050 af

Pond 205P: FES201 Peak Elev=394.38' Storage=14 cf Inflow=0.29 cfs 0.031 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0500 '/' Outflow=0.29 cfs 0.031 af

Pond 206P: CB202 Peak Elev=391.19' Inflow=1.63 cfs 0.132 af
12.0" Round Culvert n=0.013 L=95.0' S=0.0500 '/' Outflow=1.63 cfs 0.132 af

Pond 207P: CB203 Peak Elev=386.20' Inflow=1.69 cfs 0.136 af
12.0" Round Culvert n=0.013 L=27.0' S=0.0700 '/' Outflow=1.69 cfs 0.136 af

Pond 208P: CB204 Peak Elev=384.06' Inflow=1.99 cfs 0.158 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0960 '/' Outflow=1.99 cfs 0.158 af

Pond 209P: CB205 Peak Elev=370.71' Inflow=2.08 cfs 0.165 af
15.0" Round Culvert n=0.013 L=220.0' S=0.1000 '/' Outflow=2.08 cfs 0.165 af

Pond 210P: FES202 Peak Elev=367.90' Storage=11 cf Inflow=0.66 cfs 0.058 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0150 '/' Outflow=0.66 cfs 0.058 af

Pond 211P: FES204 Peak Elev=351.70' Storage=53 cf Inflow=1.77 cfs 0.150 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0400 '/' Outflow=1.76 cfs 0.150 af

Pond 212P: CB208 Peak Elev=350.46' Inflow=2.32 cfs 0.196 af
15.0" Round Culvert n=0.013 L=100.0' S=0.0170 '/' Outflow=2.32 cfs 0.196 af

Pond 213P: DMH1 Peak Elev=348.76' Inflow=4.35 cfs 0.361 af
18.0" Round Culvert n=0.013 L=111.0' S=0.0320 '/' Outflow=4.35 cfs 0.361 af

Pond 214P: HW205 Peak Elev=345.34' Inflow=0.26 cfs 0.022 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0300 '/' Outflow=0.26 cfs 0.022 af

Pond 215P: DMH2 Peak Elev=345.05' Inflow=4.60 cfs 0.383 af
18.0" Round Culvert n=0.013 L=100.0' S=0.1150 '/' Outflow=4.60 cfs 0.383 af

Pond 216P: FB202 Peak Elev=332.60' Storage=2,662 cf Inflow=4.60 cfs 0.383 af
Outflow=4.48 cfs 0.382 af

Pond 217P: CB209 Peak Elev=326.24' Inflow=0.24 cfs 0.026 af
12.0" Round Culvert n=0.013 L=63.0' S=0.0270 '/' Outflow=0.24 cfs 0.026 af

Pond 218P: FB203 Peak Elev=324.26' Storage=667 cf Inflow=0.24 cfs 0.026 af
Outflow=0.07 cfs 0.013 af

Pond 219P: DB201 Peak Elev=324.28' Storage=9,004 cf Inflow=4.95 cfs 0.509 af
Primary=0.47 cfs 0.422 af Secondary=0.00 cfs 0.000 af Outflow=0.47 cfs 0.422 af

Pond 301P: HW101 Peak Elev=310.47' Inflow=0.15 cfs 0.012 af
15.0" Round Culvert n=0.013 L=38.0' S=0.0500 '/' Outflow=0.15 cfs 0.012 af

Pond 302P: DB101 Peak Elev=304.57' Storage=488 cf Inflow=0.30 cfs 0.046 af
Primary=0.07 cfs 0.044 af Secondary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.044 af

Pond 303P: DMH7 Peak Elev=303.50' Inflow=0.19 cfs 0.065 af
15.0" Round Culvert n=0.012 L=230.0' S=0.0100 '/' Outflow=0.19 cfs 0.065 af

Pond 401P: HW401 Peak Elev=425.24' Inflow=0.26 cfs 0.082 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0350 '/' Outflow=0.26 cfs 0.082 af

Pond 402P: CB401 Peak Elev=422.89' Inflow=0.70 cfs 0.132 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0100 '/' Outflow=0.70 cfs 0.132 af

Pond 403P: CB402 Peak Elev=422.62' Inflow=1.38 cfs 0.181 af
18.0" Round Culvert n=0.013 L=62.0' S=0.0048 '/' Outflow=1.38 cfs 0.181 af

Pond 404P: DMH5 Peak Elev=422.20' Inflow=1.46 cfs 0.188 af
18.0" Round Culvert n=0.013 L=250.0' S=0.0060 '/' Outflow=1.46 cfs 0.188 af

Pond 405P: FES401 Peak Elev=432.15' Inflow=0.09 cfs 0.019 af
12.0" Round Culvert n=0.013 L=75.0' S=0.0500 '/' Outflow=0.09 cfs 0.019 af

Pond 406P: CB403 Peak Elev=428.29' Inflow=0.35 cfs 0.043 af
12.0" Round Culvert n=0.013 L=90.0' S=0.0800 '/' Outflow=0.35 cfs 0.043 af

Pond 408P: DMH6 Peak Elev=420.66' Inflow=1.88 cfs 0.237 af
18.0" Round Culvert n=0.013 L=25.0' S=0.0120 '/' Outflow=1.88 cfs 0.237 af

Pond 409P: IB401 Peak Elev=399.59' Storage=6,075 cf Inflow=1.92 cfs 0.269 af
Discarded=0.03 cfs 0.039 af Primary=0.20 cfs 0.111 af Outflow=0.23 cfs 0.150 af

Pond 410P: HW404 Peak Elev=368.19' Inflow=0.18 cfs 0.014 af
15.0" Round Culvert n=0.013 L=225.0' S=0.0260 '/' Outflow=0.18 cfs 0.014 af

Pond 411P: CB404 Peak Elev=363.20' Inflow=0.64 cfs 0.047 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0200 '/' Outflow=0.64 cfs 0.047 af

Pond 412P: CB405 Peak Elev=362.48' Inflow=1.47 cfs 0.108 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0200 '/' Outflow=1.47 cfs 0.108 af

Pond 413P: DMH3 Peak Elev=361.08' Inflow=1.47 cfs 0.108 af
15.0" Round Culvert n=0.013 L=102.0' S=0.0172 '/' Outflow=1.47 cfs 0.108 af

Pond 414P: CB406 Peak Elev=360.23' Inflow=0.15 cfs 0.017 af
12.0" Round Culvert n=0.013 L=85.0' S=0.0060 '/' Outflow=0.15 cfs 0.017 af

Pond 415P: CB407 Peak Elev=359.76' Inflow=0.51 cfs 0.045 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0200 '/' Outflow=0.51 cfs 0.045 af

Pond 416P: CB408 Peak Elev=359.26' Inflow=2.42 cfs 0.185 af
18.0" Round Culvert n=0.013 L=40.0' S=0.0100 '/' Outflow=2.42 cfs 0.185 af

Pond 417P: FB401 Peak Elev=356.08' Storage=1,119 cf Inflow=2.42 cfs 0.185 af
Outflow=2.42 cfs 0.161 af

Pond 418P: IB402 Peak Elev=355.15' Storage=4,586 cf Inflow=2.50 cfs 0.173 af
Discarded=0.03 cfs 0.032 af Primary=0.10 cfs 0.053 af Secondary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.085 af

Pond 419P: DMH4 Peak Elev=354.57' Inflow=0.10 cfs 0.053 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0050 '/' Outflow=0.10 cfs 0.053 af

Pond E1P: DI2111 Peak Elev=312.23' Inflow=0.26 cfs 0.050 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=0.26 cfs 0.050 af

Pond E2P: DI2109 Peak Elev=308.33' Inflow=0.52 cfs 0.444 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=0.52 cfs 0.444 af

Pond E3P: DI2102 Peak Elev=304.19' Inflow=0.17 cfs 0.021 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0100 '/' Outflow=0.17 cfs 0.021 af

Pond E4P: 30" RCP Peak Elev=295.08' Inflow=1.26 cfs 0.621 af
30.0" Round Culvert n=0.012 L=63.0' S=0.0540 '/' Outflow=1.26 cfs 0.621 af

Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK Inflow=2.03 cfs 1.181 af
Primary=2.03 cfs 1.181 af

Total Runoff Area = 64.783 ac Runoff Volume = 1.711 af Average Runoff Depth = 0.32"
91.85% Pervious = 59.505 ac 8.15% Impervious = 5.277 ac

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment101S: TO DI2111 Runoff Area=98,470 sf 7.73% Impervious Runoff Depth>1.29"
Flow Length=770' Tc=13.8 min CN=59 Runoff=2.34 cfs 0.242 af

Subcatchment201S: TO HW201 Runoff Area=11,860 sf 25.89% Impervious Runoff Depth>2.03"
Tc=6.0 min CN=69 Runoff=0.63 cfs 0.046 af

Subcatchment202S: TO FB201 Runoff Area=269,260 sf 3.65% Impervious Runoff Depth>1.15"
Flow Length=1,420' Tc=25.9 min UI Adjusted CN=57 Runoff=4.33 cfs 0.592 af

Subcatchment203S: BLDG. 14 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment204S: TO IB201 Runoff Area=59,400 sf 0.00% Impervious Runoff Depth>1.09"
Flow Length=539' Tc=14.0 min CN=56 Runoff=1.12 cfs 0.124 af

Subcatchment205S: TO CB201 Runoff Area=13,300 sf 81.28% Impervious Runoff Depth>4.08"
Tc=6.0 min CN=91 Runoff=1.39 cfs 0.104 af

Subcatchment206S: TO FES201 Runoff Area=35,280 sf 17.55% Impervious Runoff Depth>1.72"
Flow Length=238' Tc=7.0 min UI Adjusted CN=65 Runoff=1.50 cfs 0.116 af

Subcatchment207S: TO CB202 Runoff Area=12,730 sf 84.17% Impervious Runoff Depth>4.18"
Tc=6.0 min CN=92 Runoff=1.36 cfs 0.102 af

Subcatchment208S: TO CB203 Runoff Area=1,525 sf 66.89% Impervious Runoff Depth>3.56"
Tc=6.0 min CN=86 Runoff=0.14 cfs 0.010 af

Subcatchment209S: TO CB204 Runoff Area=5,745 sf 79.81% Impervious Runoff Depth>4.08"
Tc=6.0 min CN=91 Runoff=0.60 cfs 0.045 af

Subcatchment210S: TO CB205 Runoff Area=4,970 sf 29.78% Impervious Runoff Depth>2.27"
Tc=6.0 min CN=72 Runoff=0.30 cfs 0.022 af

Subcatchment211S: TO FES202 Runoff Area=49,550 sf 28.51% Impervious Runoff Depth>2.03"
Flow Length=297' Tc=7.0 min UI Adjusted CN=69 Runoff=2.56 cfs 0.192 af

Subcatchment212S: TO FES204 Runoff Area=56,865 sf 39.00% Impervious Runoff Depth>2.44"
Flow Length=244' Tc=7.0 min CN=74 Runoff=3.59 cfs 0.266 af

Subcatchment213S: TO CB208 Runoff Area=11,165 sf 85.80% Impervious Runoff Depth>4.29"
Tc=6.0 min CN=93 Runoff=1.21 cfs 0.092 af

Subcatchment214S: TO HW205 Runoff Area=18,535 sf 26.60% Impervious Runoff Depth>2.03"
Tc=6.0 min UI Adjusted CN=69 Runoff=0.99 cfs 0.072 af

Subcatchment215S: TO CB209 Runoff Area=31,940 sf 12.40% Impervious Runoff Depth>1.64"
Tc=6.0 min CN=64 Runoff=1.34 cfs 0.100 af

Subcatchment 216S: TO DB201 Runoff Area=91,260 sf 12.17% Impervious Runoff Depth>1.72"
Flow Length=940' Tc=11.2 min CN=65 Runoff=3.37 cfs 0.300 af

Subcatchment 217S: TO DI2109 Runoff Area=59,690 sf 9.16% Impervious Runoff Depth>1.22"
Flow Length=420' Tc=10.4 min CN=58 Runoff=1.46 cfs 0.139 af

Subcatchment 301S: TO HW101 Runoff Area=8,820 sf 26.42% Impervious Runoff Depth>2.19"
Tc=6.0 min CN=71 Runoff=0.51 cfs 0.037 af

Subcatchment 302S: TO TS-1 Runoff Area=25,690 sf 9.19% Impervious Runoff Depth>1.50"
Flow Length=276' Tc=8.8 min CN=62 Runoff=0.87 cfs 0.074 af

Subcatchment 303S: TO DB101 Runoff Area=35,390 sf 5.43% Impervious Runoff Depth>1.22"
Flow Length=317' Tc=7.8 min CN=58 Runoff=0.95 cfs 0.083 af

Subcatchment 304S: TO DI2102 Runoff Area=28,310 sf 24.73% Impervious Runoff Depth>1.57"
Flow Length=213' Tc=8.2 min CN=63 Runoff=1.04 cfs 0.085 af

Subcatchment 401S: TO HW401 Runoff Area=225,780 sf 1.06% Impervious Runoff Depth>1.08"
Flow Length=1,300' Tc=27.5 min CN=56 Runoff=3.28 cfs 0.468 af

Subcatchment 402S: TO CB401 Runoff Area=13,330 sf 80.95% Impervious Runoff Depth>4.08"
Tc=6.0 min CN=91 Runoff=1.40 cfs 0.104 af

Subcatchment 403S: TO CB402 Runoff Area=12,475 sf 85.13% Impervious Runoff Depth>4.18"
Tc=6.0 min CN=92 Runoff=1.33 cfs 0.100 af

Subcatchment 404S: BLDG. 22 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment 405S: TO FES401 Runoff Area=40,315 sf 2.98% Impervious Runoff Depth>1.22"
Flow Length=260' Tc=13.1 min CN=58 Runoff=0.91 cfs 0.094 af

Subcatchment 406S: TO CB403 Runoff Area=6,290 sf 84.90% Impervious Runoff Depth>4.18"
Tc=6.0 min CN=92 Runoff=0.67 cfs 0.050 af

Subcatchment 407S: BLDG. 21 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment 408S: TO IB401 Runoff Area=63,210 sf 4.49% Impervious Runoff Depth>1.29"
Flow Length=76' Tc=8.5 min CN=59 Runoff=1.78 cfs 0.156 af

Subcatchment 409S: TO HW404 Runoff Area=8,990 sf 32.04% Impervious Runoff Depth>2.36"
Tc=6.0 min CN=73 Runoff=0.57 cfs 0.041 af

Subcatchment 410S: TO CB404 Runoff Area=11,390 sf 84.37% Impervious Runoff Depth>4.29"
Tc=6.0 min CN=93 Runoff=1.23 cfs 0.094 af

Subcatchment 411S: TO CB405 Runoff Area=11,930 sf 80.72% Impervious Runoff Depth>4.18"
Tc=6.0 min CN=92 Runoff=1.27 cfs 0.095 af

Subcatchment 412S: T0 CB406 Runoff Area=18,840 sf 13.61% Impervious Runoff Depth>1.72"
Flow Length=382' Tc=8.7 min UI Adjusted CN=65 Runoff=0.76 cfs 0.062 af

Subcatchment 413S: TO CB407 Runoff Area=8,910 sf 62.63% Impervious Runoff Depth>3.66"
Tc=6.0 min CN=87 Runoff=0.86 cfs 0.062 af

Subcatchment 414S: TO CB408 Runoff Area=8,210 sf 82.18% Impervious Runoff Depth>4.18"
Tc=6.0 min CN=92 Runoff=0.88 cfs 0.066 af

Subcatchment 415S: TO IB402 Runoff Area=18,260 sf 7.01% Impervious Runoff Depth>1.50"
Tc=6.0 min UI Adjusted CN=62 Runoff=0.68 cfs 0.052 af

Subcatchment 416S: TO 30" RCP Runoff Area=1,440,650 sf 1.01% Impervious Runoff Depth>1.02"
Flow Length=3,260' Tc=29.7 min CN=55 Runoff=18.62 cfs 2.811 af

Reach 101R: TT-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=680.0' S=0.1176 '/' Capacity=29.75 cfs Outflow=0.00 cfs 0.000 af

Reach 201R: RD14.1 Avg. Flow Depth=0.15' Max Vel=2.79 fps Inflow=0.14 cfs 0.011 af
6.0" Round Pipe n=0.013 L=125.0' S=0.0160 '/' Capacity=0.71 cfs Outflow=0.14 cfs 0.011 af

Reach 202R: CS-1 Avg. Flow Depth=0.35' Max Vel=3.27 fps Inflow=3.09 cfs 0.643 af
n=0.069 L=370.0' S=0.1354 '/' Capacity=53.80 cfs Outflow=3.09 cfs 0.642 af

Reach 203R: CS-2 Avg. Flow Depth=0.36' Max Vel=2.13 fps Inflow=3.09 cfs 0.642 af
n=0.035 L=280.0' S=0.0140 '/' Capacity=52.72 cfs Outflow=3.08 cfs 0.641 af

Reach 204R: CS-3A Avg. Flow Depth=0.45' Max Vel=1.58 fps Inflow=3.08 cfs 0.641 af
n=0.035 L=170.0' S=0.0060 '/' Capacity=34.51 cfs Outflow=3.08 cfs 0.640 af

Reach 205R: CS-3B Avg. Flow Depth=0.41' Max Vel=2.37 fps Inflow=3.73 cfs 0.939 af
n=0.069 L=120.0' S=0.0542 '/' Capacity=42.89 cfs Outflow=3.73 cfs 0.938 af

Reach 206R: TT-2 Avg. Flow Depth=0.41' Max Vel=3.37 fps Inflow=2.54 cfs 0.192 af
n=0.050 L=200.0' S=0.0780 '/' Capacity=69.50 cfs Outflow=2.52 cfs 0.192 af

Reach 208R: TS-2 Avg. Flow Depth=0.93' Max Vel=0.55 fps Inflow=4.45 cfs 1.795 af
n=0.150 L=160.0' S=0.0050 '/' Capacity=5.11 cfs Outflow=4.45 cfs 1.788 af

Reach 301R: TS-1 Avg. Flow Depth=0.32' Max Vel=1.39 fps Inflow=1.34 cfs 0.111 af
n=0.035 L=160.0' S=0.0075 '/' Capacity=13.09 cfs Outflow=1.31 cfs 0.110 af

Reach 401R: RD22.1 Avg. Flow Depth=0.14' Max Vel=3.02 fps Inflow=0.14 cfs 0.011 af
6.0" Round Pipe n=0.013 L=105.0' S=0.0200 '/' Capacity=0.79 cfs Outflow=0.14 cfs 0.011 af

Reach 402R: RD21.1 Avg. Flow Depth=0.13' Max Vel=3.49 fps Inflow=0.14 cfs 0.011 af
6.0" Round Pipe n=0.013 L=123.0' S=0.0301 '/' Capacity=0.97 cfs Outflow=0.14 cfs 0.011 af

Reach 403R: SS-1 Avg. Flow Depth=0.45' Max Vel=2.10 fps Inflow=5.01 cfs 0.839 af
n=0.035 L=120.0' S=0.0100 '/' Capacity=95.96 cfs Outflow=5.01 cfs 0.838 af

Reach 404R: TT-3 Avg. Flow Depth=0.32' Max Vel=3.46 fps Inflow=2.46 cfs 0.802 af
n=0.050 L=465.0' S=0.1118 '/' Capacity=29.00 cfs Outflow=2.45 cfs 0.801 af

Reach 406R: TT-4 Avg. Flow Depth=0.23' Max Vel=1.66 fps Inflow=0.99 cfs 0.310 af
n=0.070 L=160.0' S=0.0750 '/' Capacity=23.05 cfs Outflow=0.99 cfs 0.310 af

Reach 408R: EXIST. CHANNEL Avg. Flow Depth=0.24' Max Vel=3.04 fps Inflow=3.40 cfs 1.111 af
n=0.040 L=546.0' S=0.0769 '/' Capacity=327.19 cfs Outflow=3.39 cfs 1.108 af

Pond 201P: HW201 Peak Elev=399.38' Storage=49 cf Inflow=0.63 cfs 0.046 af
15.0" Round Culvert n=0.013 L=90.0' S=0.0080 '/' Outflow=0.61 cfs 0.046 af

Pond 202P: FB201 Peak Elev=396.09' Storage=893 cf Inflow=4.57 cfs 0.638 af
Outflow=4.57 cfs 0.618 af

Pond 203P: IB201 Peak Elev=396.07' Storage=7,220 cf Inflow=5.48 cfs 0.753 af
Discarded=0.03 cfs 0.029 af Primary=3.09 cfs 0.643 af Secondary=0.00 cfs 0.000 af Outflow=3.12 cfs 0.672 af

Pond 204P: CB201 Peak Elev=392.29' Inflow=1.39 cfs 0.104 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0150 '/' Outflow=1.39 cfs 0.104 af

Pond 205P: FES201 Peak Elev=394.80' Storage=86 cf Inflow=1.50 cfs 0.116 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0500 '/' Outflow=1.47 cfs 0.116 af

Pond 206P: CB202 Peak Elev=392.17' Inflow=4.10 cfs 0.321 af
12.0" Round Culvert n=0.013 L=95.0' S=0.0500 '/' Outflow=4.10 cfs 0.321 af

Pond 207P: CB203 Peak Elev=387.26' Inflow=4.24 cfs 0.332 af
12.0" Round Culvert n=0.013 L=27.0' S=0.0700 '/' Outflow=4.24 cfs 0.332 af

Pond 208P: CB204 Peak Elev=384.65' Inflow=4.84 cfs 0.377 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0960 '/' Outflow=4.84 cfs 0.377 af

Pond 209P: CB205 Peak Elev=371.38' Inflow=5.14 cfs 0.398 af
15.0" Round Culvert n=0.013 L=220.0' S=0.1000 '/' Outflow=5.14 cfs 0.398 af

Pond 210P: FES202 Peak Elev=368.37' Storage=57 cf Inflow=2.56 cfs 0.192 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0150 '/' Outflow=2.54 cfs 0.192 af

Pond 211P: FES204 Peak Elev=352.80' Storage=472 cf Inflow=6.06 cfs 0.457 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0400 '/' Outflow=5.59 cfs 0.457 af

Pond 212P: CB208 Peak Elev=351.85' Inflow=6.44 cfs 0.549 af
15.0" Round Culvert n=0.013 L=100.0' S=0.0170 '/' Outflow=6.44 cfs 0.549 af

Pond 213P: DMH1 Peak Elev=350.29' Inflow=11.38 cfs 0.947 af
18.0" Round Culvert n=0.013 L=111.0' S=0.0320 '/' Outflow=11.38 cfs 0.947 af

Pond 214P: HW205 Peak Elev=346.89' Inflow=0.99 cfs 0.072 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0300 '/' Outflow=0.99 cfs 0.072 af

Pond 215P: DMH2 Peak Elev=346.86' Inflow=12.36 cfs 1.019 af
18.0" Round Culvert n=0.013 L=100.0' S=0.1150 '/' Outflow=12.36 cfs 1.019 af

Pond 216P: FB202 Peak Elev=332.86' Storage=3,134 cf Inflow=12.36 cfs 1.019 af
Outflow=12.20 cfs 1.018 af

Pond 217P: CB209 Peak Elev=327.16' Inflow=1.34 cfs 0.100 af
12.0" Round Culvert n=0.013 L=63.0' S=0.0270 '/' Outflow=1.34 cfs 0.100 af

Pond 218P: FB203 Peak Elev=327.16' Storage=1,050 cf Inflow=1.34 cfs 0.100 af
Outflow=1.66 cfs 0.081 af

Pond 219P: DB201 Peak Elev=327.18' Storage=27,233 cf Inflow=16.11 cfs 2.038 af
Primary=4.45 cfs 1.795 af Secondary=0.00 cfs 0.000 af Outflow=4.45 cfs 1.795 af

Pond 301P: HW101 Peak Elev=310.63' Inflow=0.51 cfs 0.037 af
15.0" Round Culvert n=0.013 L=38.0' S=0.0500 '/' Outflow=0.51 cfs 0.037 af

Pond 302P: DB101 Peak Elev=305.87' Storage=2,132 cf Inflow=2.25 cfs 0.193 af
Primary=0.91 cfs 0.186 af Secondary=0.00 cfs 0.000 af Outflow=0.91 cfs 0.186 af

Pond 303P: DMH7 Peak Elev=303.88' Inflow=1.43 cfs 0.271 af
15.0" Round Culvert n=0.012 L=230.0' S=0.0100 '/' Outflow=1.43 cfs 0.271 af

Pond 401P: HW401 Peak Elev=425.94' Inflow=3.28 cfs 0.468 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0350 '/' Outflow=3.28 cfs 0.468 af

Pond 402P: CB401 Peak Elev=423.64' Inflow=3.65 cfs 0.572 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0100 '/' Outflow=3.65 cfs 0.572 af

Pond 403P: CB402 Peak Elev=423.21' Inflow=4.03 cfs 0.672 af
18.0" Round Culvert n=0.013 L=62.0' S=0.0048 '/' Outflow=4.03 cfs 0.672 af

Pond 404P: DMH5 Peak Elev=422.70' Inflow=4.08 cfs 0.683 af
18.0" Round Culvert n=0.013 L=250.0' S=0.0060 '/' Outflow=4.08 cfs 0.683 af

Pond 405P: FES401 Peak Elev=432.53' Inflow=0.91 cfs 0.094 af
12.0" Round Culvert n=0.013 L=75.0' S=0.0500 '/' Outflow=0.91 cfs 0.094 af

Pond 406P: CB403 Peak Elev=428.61' Inflow=1.34 cfs 0.144 af
12.0" Round Culvert n=0.013 L=90.0' S=0.0800 '/' Outflow=1.34 cfs 0.144 af

Pond 408P: DMH6 Peak Elev=421.20' Inflow=5.01 cfs 0.839 af
18.0" Round Culvert n=0.013 L=25.0' S=0.0120 '/' Outflow=5.01 cfs 0.839 af

Pond 409P: IB401 Peak Elev=401.31' Storage=14,807 cf Inflow=6.69 cfs 0.994 af
Discarded=0.04 cfs 0.047 af Primary=2.46 cfs 0.802 af Outflow=2.50 cfs 0.850 af

Pond 410P: HW404 Peak Elev=368.35' Inflow=0.57 cfs 0.041 af
15.0" Round Culvert n=0.013 L=225.0' S=0.0260 '/' Outflow=0.57 cfs 0.041 af

Pond 411P: CB404 Peak Elev=363.38' Inflow=1.23 cfs 0.094 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0200 '/' Outflow=1.23 cfs 0.094 af

Pond 412P: CB405 Peak Elev=362.80' Inflow=3.07 cfs 0.230 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0200 '/' Outflow=3.07 cfs 0.230 af

Pond 413P: DMH3 Peak Elev=361.40' Inflow=3.07 cfs 0.230 af
15.0" Round Culvert n=0.013 L=102.0' S=0.0172 '/' Outflow=3.07 cfs 0.230 af

Pond 414P: CB406 Peak Elev=360.57' Inflow=0.76 cfs 0.062 af
12.0" Round Culvert n=0.013 L=85.0' S=0.0060 '/' Outflow=0.76 cfs 0.062 af

Pond 415P: CB407 Peak Elev=360.15' Inflow=1.56 cfs 0.124 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0200 '/' Outflow=1.56 cfs 0.124 af

Pond 416P: CB408 Peak Elev=359.76' Inflow=5.48 cfs 0.419 af
18.0" Round Culvert n=0.013 L=40.0' S=0.0100 '/' Outflow=5.48 cfs 0.419 af

Pond 417P: FB401 Peak Elev=356.14' Storage=1,163 cf Inflow=5.48 cfs 0.419 af
Outflow=5.47 cfs 0.395 af

Pond 418P: IB402 Peak Elev=356.05' Storage=9,222 cf Inflow=6.16 cfs 0.447 af
Discarded=0.04 cfs 0.038 af Primary=0.99 cfs 0.310 af Secondary=0.00 cfs 0.000 af Outflow=1.03 cfs 0.348 af

Pond 419P: DMH4 Peak Elev=354.96' Inflow=0.99 cfs 0.310 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0050 '/' Outflow=0.99 cfs 0.310 af

Pond E1P: DI2111 Peak Elev=312.77' Inflow=2.34 cfs 0.242 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=2.34 cfs 0.242 af

Pond E2P: DI2109 Peak Elev=309.25' Inflow=4.67 cfs 1.927 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=4.67 cfs 1.927 af

Pond E3P: DI2102 Peak Elev=304.51' Inflow=1.04 cfs 0.085 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0100 '/' Outflow=1.04 cfs 0.085 af

Pond E4P: 30" RCP Peak Elev=296.48' Inflow=21.15 cfs 3.919 af
30.0" Round Culvert n=0.012 L=63.0' S=0.0540 '/' Outflow=21.15 cfs 3.919 af

Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK Inflow=27.67 cfs 6.359 af
Primary=27.67 cfs 6.359 af

Total Runoff Area = 64.783 ac Runoff Volume = 7.129 af Average Runoff Depth = 1.32"
91.85% Pervious = 59.505 ac 8.15% Impervious = 5.277 ac

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment101S: TO DI2111 Runoff Area=98,470 sf 7.73% Impervious Runoff Depth>1.64"
Flow Length=770' Tc=13.8 min CN=59 Runoff=3.12 cfs 0.310 af

Subcatchment201S: TO HW201 Runoff Area=11,860 sf 25.89% Impervious Runoff Depth>2.48"
Tc=6.0 min CN=69 Runoff=0.78 cfs 0.056 af

Subcatchment202S: TO FB201 Runoff Area=269,260 sf 3.65% Impervious Runoff Depth>1.49"
Flow Length=1,420' Tc=25.9 min UI Adjusted CN=57 Runoff=5.87 cfs 0.765 af

Subcatchment203S: BLDG. 14 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>5.44"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment204S: TO IB201 Runoff Area=59,400 sf 0.00% Impervious Runoff Depth>1.42"
Flow Length=539' Tc=14.0 min CN=56 Runoff=1.54 cfs 0.161 af

Subcatchment205S: TO CB201 Runoff Area=13,300 sf 81.28% Impervious Runoff Depth>4.66"
Tc=6.0 min CN=91 Runoff=1.58 cfs 0.119 af

Subcatchment206S: TO FES201 Runoff Area=35,280 sf 17.55% Impervious Runoff Depth>2.13"
Flow Length=238' Tc=7.0 min UI Adjusted CN=65 Runoff=1.90 cfs 0.144 af

Subcatchment207S: TO CB202 Runoff Area=12,730 sf 84.17% Impervious Runoff Depth>4.77"
Tc=6.0 min CN=92 Runoff=1.54 cfs 0.116 af

Subcatchment208S: TO CB203 Runoff Area=1,525 sf 66.89% Impervious Runoff Depth>4.12"
Tc=6.0 min CN=86 Runoff=0.17 cfs 0.012 af

Subcatchment209S: TO CB204 Runoff Area=5,745 sf 79.81% Impervious Runoff Depth>4.66"
Tc=6.0 min CN=91 Runoff=0.68 cfs 0.051 af

Subcatchment210S: TO CB205 Runoff Area=4,970 sf 29.78% Impervious Runoff Depth>2.75"
Tc=6.0 min CN=72 Runoff=0.37 cfs 0.026 af

Subcatchment211S: TO FES202 Runoff Area=49,550 sf 28.51% Impervious Runoff Depth>2.48"
Flow Length=297' Tc=7.0 min UI Adjusted CN=69 Runoff=3.15 cfs 0.235 af

Subcatchment212S: TO FES204 Runoff Area=56,865 sf 39.00% Impervious Runoff Depth>2.93"
Flow Length=244' Tc=7.0 min CN=74 Runoff=4.33 cfs 0.319 af

Subcatchment213S: TO CB208 Runoff Area=11,165 sf 85.80% Impervious Runoff Depth>4.88"
Tc=6.0 min CN=93 Runoff=1.37 cfs 0.104 af

Subcatchment214S: TO HW205 Runoff Area=18,535 sf 26.60% Impervious Runoff Depth>2.48"
Tc=6.0 min UI Adjusted CN=69 Runoff=1.22 cfs 0.088 af

Subcatchment215S: TO CB209 Runoff Area=31,940 sf 12.40% Impervious Runoff Depth>2.05"
Tc=6.0 min CN=64 Runoff=1.70 cfs 0.125 af

Subcatchment 216S: TO DB201 Runoff Area=91,260 sf 12.17% Impervious Runoff Depth>2.13"
Flow Length=940' Tc=11.2 min CN=65 Runoff=4.27 cfs 0.372 af

Subcatchment 217S: TO DI2109 Runoff Area=59,690 sf 9.16% Impervious Runoff Depth>1.57"
Flow Length=420' Tc=10.4 min CN=58 Runoff=1.97 cfs 0.179 af

Subcatchment 301S: TO HW101 Runoff Area=8,820 sf 26.42% Impervious Runoff Depth>2.66"
Tc=6.0 min CN=71 Runoff=0.63 cfs 0.045 af

Subcatchment 302S: TO TS-1 Runoff Area=25,690 sf 9.19% Impervious Runoff Depth>1.88"
Flow Length=276' Tc=8.8 min CN=62 Runoff=1.12 cfs 0.093 af

Subcatchment 303S: TO DB101 Runoff Area=35,390 sf 5.43% Impervious Runoff Depth>1.57"
Flow Length=317' Tc=7.8 min CN=58 Runoff=1.28 cfs 0.106 af

Subcatchment 304S: TO DI2102 Runoff Area=28,310 sf 24.73% Impervious Runoff Depth>1.97"
Flow Length=213' Tc=8.2 min CN=63 Runoff=1.33 cfs 0.106 af

Subcatchment 401S: TO HW401 Runoff Area=225,780 sf 1.06% Impervious Runoff Depth>1.41"
Flow Length=1,300' Tc=27.5 min CN=56 Runoff=4.50 cfs 0.609 af

Subcatchment 402S: TO CB401 Runoff Area=13,330 sf 80.95% Impervious Runoff Depth>4.66"
Tc=6.0 min CN=91 Runoff=1.59 cfs 0.119 af

Subcatchment 403S: TO CB402 Runoff Area=12,475 sf 85.13% Impervious Runoff Depth>4.77"
Tc=6.0 min CN=92 Runoff=1.51 cfs 0.114 af

Subcatchment 404S: BLDG. 22 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>5.44"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment 405S: TO FES401 Runoff Area=40,315 sf 2.98% Impervious Runoff Depth>1.57"
Flow Length=260' Tc=13.1 min CN=58 Runoff=1.22 cfs 0.121 af

Subcatchment 406S: TO CB403 Runoff Area=6,290 sf 84.90% Impervious Runoff Depth>4.77"
Tc=6.0 min CN=92 Runoff=0.76 cfs 0.057 af

Subcatchment 407S: BLDG. 21 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>5.44"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment 408S: TO IB401 Runoff Area=63,210 sf 4.49% Impervious Runoff Depth>1.65"
Flow Length=76' Tc=8.5 min CN=59 Runoff=2.36 cfs 0.199 af

Subcatchment 409S: TO HW404 Runoff Area=8,990 sf 32.04% Impervious Runoff Depth>2.84"
Tc=6.0 min CN=73 Runoff=0.69 cfs 0.049 af

Subcatchment 410S: TO CB404 Runoff Area=11,390 sf 84.37% Impervious Runoff Depth>4.88"
Tc=6.0 min CN=93 Runoff=1.39 cfs 0.106 af

Subcatchment 411S: TO CB405 Runoff Area=11,930 sf 80.72% Impervious Runoff Depth>4.77"
Tc=6.0 min CN=92 Runoff=1.44 cfs 0.109 af

Subcatchment 412S: T0 CB406 Runoff Area=18,840 sf 13.61% Impervious Runoff Depth>2.13"
Flow Length=382' Tc=8.7 min UI Adjusted CN=65 Runoff=0.96 cfs 0.077 af

Subcatchment 413S: TO CB407 Runoff Area=8,910 sf 62.63% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=87 Runoff=0.99 cfs 0.072 af

Subcatchment 414S: TO CB408 Runoff Area=8,210 sf 82.18% Impervious Runoff Depth>4.77"
Tc=6.0 min CN=92 Runoff=0.99 cfs 0.075 af

Subcatchment 415S: TO IB402 Runoff Area=18,260 sf 7.01% Impervious Runoff Depth>1.89"
Tc=6.0 min UI Adjusted CN=62 Runoff=0.88 cfs 0.066 af

Subcatchment 416S: TO 30" RCP Runoff Area=1,440,650 sf 1.01% Impervious Runoff Depth>1.34"
Flow Length=3,260' Tc=29.7 min CN=55 Runoff=25.82 cfs 3.682 af

Reach 101R: TT-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=680.0' S=0.1176 '/' Capacity=29.75 cfs Outflow=0.00 cfs 0.000 af

Reach 201R: RD14.1 Avg. Flow Depth=0.16' Max Vel=2.88 fps Inflow=0.15 cfs 0.012 af
6.0" Round Pipe n=0.013 L=125.0' S=0.0160 '/' Capacity=0.71 cfs Outflow=0.15 cfs 0.012 af

Reach 202R: CS-1 Avg. Flow Depth=0.40' Max Vel=3.52 fps Inflow=3.94 cfs 0.863 af
n=0.069 L=370.0' S=0.1354 '/' Capacity=53.80 cfs Outflow=3.94 cfs 0.861 af

Reach 203R: CS-2 Avg. Flow Depth=0.41' Max Vel=2.29 fps Inflow=3.94 cfs 0.861 af
n=0.035 L=280.0' S=0.0140 '/' Capacity=52.72 cfs Outflow=3.94 cfs 0.859 af

Reach 204R: CS-3A Avg. Flow Depth=0.51' Max Vel=1.70 fps Inflow=3.94 cfs 0.859 af
n=0.035 L=170.0' S=0.0060 '/' Capacity=34.51 cfs Outflow=3.93 cfs 0.858 af

Reach 205R: CS-3B Avg. Flow Depth=0.48' Max Vel=2.58 fps Inflow=4.92 cfs 1.230 af
n=0.069 L=120.0' S=0.0542 '/' Capacity=42.89 cfs Outflow=4.92 cfs 1.229 af

Reach 206R: TT-2 Avg. Flow Depth=0.45' Max Vel=3.59 fps Inflow=3.13 cfs 0.235 af
n=0.050 L=200.0' S=0.0780 '/' Capacity=69.50 cfs Outflow=3.11 cfs 0.235 af

Reach 208R: TS-2 Avg. Flow Depth=1.09' Max Vel=0.59 fps Inflow=5.95 cfs 2.289 af
n=0.150 L=160.0' S=0.0050 '/' Capacity=5.11 cfs Outflow=5.95 cfs 2.280 af

Reach 301R: TS-1 Avg. Flow Depth=0.36' Max Vel=1.50 fps Inflow=1.70 cfs 0.137 af
n=0.035 L=160.0' S=0.0075 '/' Capacity=13.09 cfs Outflow=1.66 cfs 0.137 af

Reach 401R: RD22.1 Avg. Flow Depth=0.15' Max Vel=3.12 fps Inflow=0.15 cfs 0.012 af
6.0" Round Pipe n=0.013 L=105.0' S=0.0200 '/' Capacity=0.79 cfs Outflow=0.15 cfs 0.012 af

Reach 402R: RD21.1 Avg. Flow Depth=0.13' Max Vel=3.61 fps Inflow=0.15 cfs 0.012 af
6.0" Round Pipe n=0.013 L=123.0' S=0.0301 '/' Capacity=0.97 cfs Outflow=0.15 cfs 0.012 af

Reach 403R: SS-1 Avg. Flow Depth=0.52' Max Vel=2.29 fps Inflow=6.61 cfs 1.045 af
n=0.035 L=120.0' S=0.0100 '/' Capacity=95.96 cfs Outflow=6.61 cfs 1.044 af

Reach 404R: TT-3 Avg. Flow Depth=0.37' Max Vel=3.85 fps Inflow=3.47 cfs 1.044 af
n=0.050 L=465.0' S=0.1118 '/' Capacity=29.00 cfs Outflow=3.47 cfs 1.042 af

Reach 406R: TT-4 Avg. Flow Depth=0.26' Max Vel=1.81 fps Inflow=1.30 cfs 0.388 af
n=0.070 L=160.0' S=0.0750 '/' Capacity=23.05 cfs Outflow=1.30 cfs 0.387 af

Reach 408R: EXIST. CHANNEL Avg. Flow Depth=0.28' Max Vel=3.36 fps Inflow=4.71 cfs 1.430 af
n=0.040 L=546.0' S=0.0769 '/' Capacity=327.19 cfs Outflow=4.70 cfs 1.427 af

Pond 201P: HW201 Peak Elev=399.42' Storage=60 cf Inflow=0.78 cfs 0.056 af
15.0" Round Culvert n=0.013 L=90.0' S=0.0080 '/' Outflow=0.75 cfs 0.056 af

Pond 202P: FB201 Peak Elev=396.49' Storage=1,179 cf Inflow=6.17 cfs 0.821 af
Outflow=6.17 cfs 0.802 af

Pond 203P: IB201 Peak Elev=396.49' Storage=9,344 cf Inflow=7.38 cfs 0.975 af
Discarded=0.04 cfs 0.030 af Primary=3.94 cfs 0.863 af Secondary=0.00 cfs 0.000 af Outflow=3.98 cfs 0.892 af

Pond 204P: CB201 Peak Elev=392.77' Inflow=1.58 cfs 0.119 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0150 '/' Outflow=1.58 cfs 0.119 af

Pond 205P: FES201 Peak Elev=394.91' Storage=115 cf Inflow=1.90 cfs 0.144 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0500 '/' Outflow=1.84 cfs 0.144 af

Pond 206P: CB202 Peak Elev=392.62' Inflow=4.81 cfs 0.379 af
12.0" Round Culvert n=0.013 L=95.0' S=0.0500 '/' Outflow=4.81 cfs 0.379 af

Pond 207P: CB203 Peak Elev=387.73' Inflow=4.98 cfs 0.391 af
12.0" Round Culvert n=0.013 L=27.0' S=0.0700 '/' Outflow=4.98 cfs 0.391 af

Pond 208P: CB204 Peak Elev=384.90' Inflow=5.65 cfs 0.442 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0960 '/' Outflow=5.65 cfs 0.442 af

Pond 209P: CB205 Peak Elev=371.66' Inflow=6.02 cfs 0.468 af
15.0" Round Culvert n=0.013 L=220.0' S=0.1000 '/' Outflow=6.02 cfs 0.468 af

Pond 210P: FES202 Peak Elev=368.49' Storage=77 cf Inflow=3.15 cfs 0.235 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0150 '/' Outflow=3.13 cfs 0.235 af

Pond 211P: FES204 Peak Elev=353.39' Storage=986 cf Inflow=7.36 cfs 0.553 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0400 '/' Outflow=6.16 cfs 0.553 af

Pond 212P: CB208 Peak Elev=352.32' Inflow=6.96 cfs 0.658 af
15.0" Round Culvert n=0.013 L=100.0' S=0.0170 '/' Outflow=6.96 cfs 0.658 af

Pond 213P: DMH1 Peak Elev=350.70' Inflow=12.63 cfs 1.126 af
18.0" Round Culvert n=0.013 L=111.0' S=0.0320 '/' Outflow=12.63 cfs 1.126 af

Pond 214P: HW205 Peak Elev=347.44' Inflow=1.22 cfs 0.088 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0300 '/' Outflow=1.22 cfs 0.088 af

Pond 215P: DMH2 Peak Elev=347.39' Inflow=13.84 cfs 1.213 af
18.0" Round Culvert n=0.013 L=100.0' S=0.1150 '/' Outflow=13.84 cfs 1.213 af

Pond 216P: FB202 Peak Elev=332.89' Storage=3,197 cf Inflow=13.84 cfs 1.213 af
Outflow=13.41 cfs 1.212 af

Pond 217P: CB209 Peak Elev=328.06' Inflow=1.70 cfs 0.125 af
12.0" Round Culvert n=0.013 L=63.0' S=0.0270 '/' Outflow=1.70 cfs 0.125 af

Pond 218P: FB203 Peak Elev=328.21' Storage=1,050 cf Inflow=1.70 cfs 0.125 af
Outflow=2.86 cfs 0.105 af

Pond 219P: DB201 Peak Elev=327.88' Storage=32,873 cf Inflow=19.96 cfs 2.546 af
Primary=5.95 cfs 2.289 af Secondary=0.00 cfs 0.000 af Outflow=5.95 cfs 2.289 af

Pond 301P: HW101 Peak Elev=310.67' Inflow=0.63 cfs 0.045 af
15.0" Round Culvert n=0.013 L=38.0' S=0.0500 '/' Outflow=0.63 cfs 0.045 af

Pond 302P: DB101 Peak Elev=306.19' Storage=2,679 cf Inflow=2.93 cfs 0.243 af
Primary=1.23 cfs 0.234 af Secondary=0.00 cfs 0.000 af Outflow=1.23 cfs 0.234 af

Pond 303P: DMH7 Peak Elev=303.99' Inflow=1.98 cfs 0.340 af
15.0" Round Culvert n=0.012 L=230.0' S=0.0100 '/' Outflow=1.98 cfs 0.340 af

Pond 401P: HW401 Peak Elev=426.19' Inflow=4.50 cfs 0.609 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0350 '/' Outflow=4.50 cfs 0.609 af

Pond 402P: CB401 Peak Elev=424.18' Inflow=4.93 cfs 0.728 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0100 '/' Outflow=4.93 cfs 0.728 af

Pond 403P: CB402 Peak Elev=423.49' Inflow=5.38 cfs 0.842 af
18.0" Round Culvert n=0.013 L=62.0' S=0.0048 '/' Outflow=5.38 cfs 0.842 af

Pond 404P: DMH5 Peak Elev=422.95' Inflow=5.43 cfs 0.854 af
18.0" Round Culvert n=0.013 L=250.0' S=0.0060 '/' Outflow=5.43 cfs 0.854 af

Pond 405P: FES401 Peak Elev=432.62' Inflow=1.22 cfs 0.121 af
12.0" Round Culvert n=0.013 L=75.0' S=0.0500 '/' Outflow=1.22 cfs 0.121 af

Pond 406P: CB403 Peak Elev=428.71' Inflow=1.72 cfs 0.178 af
12.0" Round Culvert n=0.013 L=90.0' S=0.0800 '/' Outflow=1.72 cfs 0.178 af

Pond 408P: DMH6 Peak Elev=421.46' Inflow=6.61 cfs 1.045 af
18.0" Round Culvert n=0.013 L=25.0' S=0.0120 '/' Outflow=6.61 cfs 1.045 af

Pond 409P: IB401 Peak Elev=401.86' Storage=18,115 cf Inflow=8.57 cfs 1.243 af
Discarded=0.04 cfs 0.049 af Primary=3.47 cfs 1.044 af Outflow=3.52 cfs 1.093 af

Pond 410P: HW404 Peak Elev=368.39' Inflow=0.69 cfs 0.049 af
15.0" Round Culvert n=0.013 L=225.0' S=0.0260 '/' Outflow=0.69 cfs 0.049 af

Pond 411P: CB404 Peak Elev=363.43' Inflow=1.39 cfs 0.106 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0200 '/' Outflow=1.39 cfs 0.106 af

Pond 412P: CB405 Peak Elev=362.89' Inflow=3.52 cfs 0.264 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0200 '/' Outflow=3.52 cfs 0.264 af

Pond 413P: DMH3 Peak Elev=361.49' Inflow=3.52 cfs 0.264 af
15.0" Round Culvert n=0.013 L=102.0' S=0.0172 '/' Outflow=3.52 cfs 0.264 af

Pond 414P: CB406 Peak Elev=360.67' Inflow=0.96 cfs 0.077 af
12.0" Round Culvert n=0.013 L=85.0' S=0.0060 '/' Outflow=0.96 cfs 0.077 af

Pond 415P: CB407 Peak Elev=360.27' Inflow=1.88 cfs 0.149 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0200 '/' Outflow=1.88 cfs 0.149 af

Pond 416P: CB408 Peak Elev=359.90' Inflow=6.36 cfs 0.488 af
18.0" Round Culvert n=0.013 L=40.0' S=0.0100 '/' Outflow=6.36 cfs 0.488 af

Pond 417P: FB401 Peak Elev=356.28' Storage=1,268 cf Inflow=6.36 cfs 0.488 af
Outflow=6.35 cfs 0.463 af

Pond 418P: IB402 Peak Elev=356.28' Storage=10,619 cf Inflow=7.23 cfs 0.529 af
Discarded=0.04 cfs 0.040 af Primary=1.30 cfs 0.388 af Secondary=0.00 cfs 0.000 af Outflow=1.34 cfs 0.428 af

Pond 419P: DMH4 Peak Elev=355.05' Inflow=1.30 cfs 0.388 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0050 '/' Outflow=1.30 cfs 0.388 af

Pond E1P: DI2111 Peak Elev=312.91' Inflow=3.12 cfs 0.310 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=3.12 cfs 0.310 af

Pond E2P: DI2109 Peak Elev=309.74' Inflow=6.23 cfs 2.460 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=6.23 cfs 2.460 af

Pond E3P: DI2102 Peak Elev=304.60' Inflow=1.33 cfs 0.106 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0100 '/' Outflow=1.33 cfs 0.106 af

Pond E4P: 30" RCP Peak Elev=296.94' Inflow=29.53 cfs 5.109 af
30.0" Round Culvert n=0.012 L=63.0' S=0.0540 '/' Outflow=29.53 cfs 5.109 af

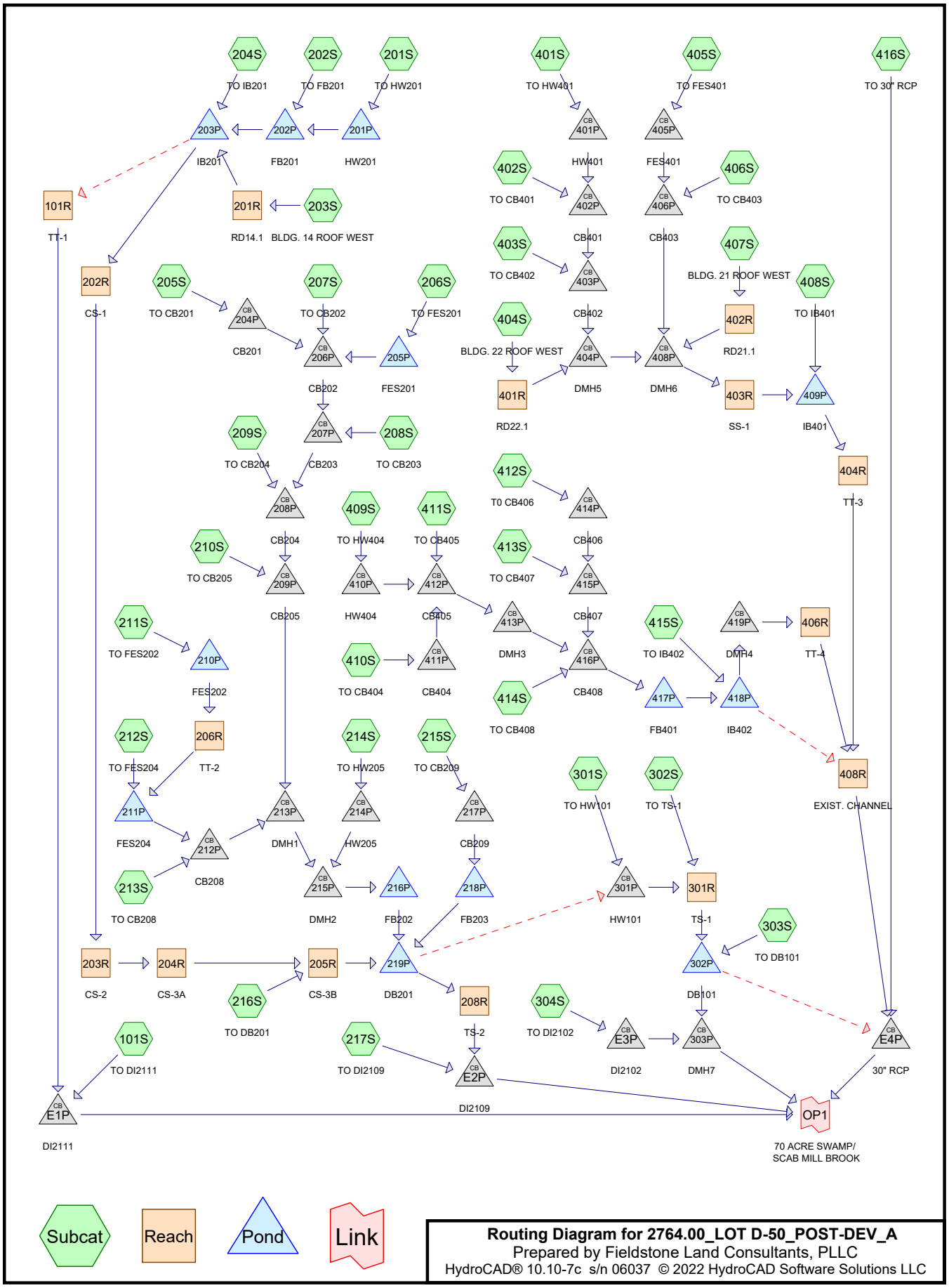
Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK Inflow=38.52 cfs 8.219 af
Primary=38.52 cfs 8.219 af

Total Runoff Area = 64.783 ac Runoff Volume = 9.025 af Average Runoff Depth = 1.67"
91.85% Pervious = 59.505 ac 8.15% Impervious = 5.277 ac

Section 2.2

Proposed Conditions

10 Year Storm Full Summary



Routing Diagram for 2764.00_LOT D-50_POST-DEV_A
Prepared by Fieldstone Land Consultants, PLLC
HydroCAD® 10.10-7c s/n 06037 © 2022 HydroCAD Software Solutions LLC

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	201R	398.20	396.20	125.0	0.0160	0.013	0.0	6.0	0.0
2	401R	425.00	422.90	105.0	0.0200	0.013	0.0	6.0	0.0
3	402R	427.50	423.80	123.0	0.0301	0.013	0.0	6.0	0.0
4	201P	399.00	398.28	90.0	0.0080	0.013	0.0	15.0	0.0
5	203P	394.90	388.90	30.0	0.2000	0.013	0.0	12.0	0.0
6	204P	390.90	390.60	20.0	0.0150	0.013	0.0	12.0	0.0
7	205P	394.10	390.60	70.0	0.0500	0.013	0.0	12.0	0.0
8	206P	390.50	385.75	95.0	0.0500	0.013	0.0	12.0	0.0
9	207P	385.50	383.61	27.0	0.0700	0.013	0.0	12.0	0.0
10	208P	383.36	370.40	135.0	0.0960	0.013	0.0	15.0	0.0
11	209P	370.00	348.00	220.0	0.1000	0.013	0.0	15.0	0.0
12	210P	367.50	366.60	60.0	0.0150	0.013	0.0	15.0	0.0
13	211P	351.00	349.80	30.0	0.0400	0.013	0.0	15.0	0.0
14	212P	349.70	348.00	100.0	0.0170	0.013	0.0	15.0	0.0
15	213P	347.75	344.20	111.0	0.0320	0.013	0.0	18.0	0.0
16	214P	345.10	344.50	20.0	0.0300	0.013	0.0	15.0	0.0
17	215P	344.00	332.50	100.0	0.1150	0.013	0.0	18.0	0.0
18	217P	326.00	324.30	63.0	0.0270	0.013	0.0	12.0	0.0
19	219P	321.70	320.50	40.0	0.0300	0.013	0.0	15.0	0.0
20	301P	310.30	308.40	38.0	0.0500	0.013	0.0	15.0	0.0
21	302P	303.90	303.80	15.0	0.0067	0.013	0.0	12.0	0.0
22	303P	303.30	301.00	230.0	0.0100	0.012	0.0	15.0	0.0
23	401P	425.00	422.55	70.0	0.0350	0.013	0.0	15.0	0.0
24	402P	422.45	422.25	20.0	0.0100	0.013	0.0	15.0	0.0
25	403P	422.00	421.70	62.0	0.0048	0.013	0.0	18.0	0.0
26	404P	421.60	420.10	250.0	0.0060	0.013	0.0	18.0	0.0
27	405P	432.00	428.25	75.0	0.0500	0.013	0.0	12.0	0.0
28	406P	428.00	420.80	90.0	0.0800	0.013	0.0	12.0	0.0
29	408P	420.00	419.70	25.0	0.0120	0.013	0.0	18.0	0.0
30	409P	398.70	394.20	30.0	0.1500	0.013	0.0	15.0	0.0
31	410P	368.00	362.15	225.0	0.0260	0.013	0.0	15.0	0.0
32	411P	362.80	362.40	20.0	0.0200	0.013	0.0	12.0	0.0
33	412P	361.90	360.60	65.0	0.0200	0.013	0.0	15.0	0.0
34	413P	360.50	358.75	102.0	0.0172	0.013	0.0	15.0	0.0
35	414P	360.01	359.50	85.0	0.0060	0.013	0.0	12.0	0.0
36	415P	359.40	359.00	20.0	0.0200	0.013	0.0	12.0	0.0
37	416P	358.50	358.10	40.0	0.0100	0.013	0.0	18.0	0.0
38	418P	354.80	354.50	60.0	0.0050	0.013	0.0	15.0	0.0
39	419P	354.40	354.20	40.0	0.0050	0.013	0.0	15.0	0.0
40	E1P	312.00	310.00	200.0	0.0100	0.013	0.0	15.0	0.0
41	E2P	308.00	306.00	200.0	0.0100	0.013	0.0	15.0	0.0

Pipe Listing (all nodes) (continued)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
42	E3P	304.00	303.30	70.0	0.0100	0.013	0.0	15.0	0.0
43	E4P	294.70	291.30	63.0	0.0540	0.012	0.0	30.0	0.0

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment101S: TO DI2111 Runoff Area=98,470 sf 7.73% Impervious Runoff Depth>0.86"
Flow Length=770' Tc=13.8 min CN=59 Runoff=1.41 cfs 0.161 af

Subcatchment201S: TO HW201 Runoff Area=11,860 sf 25.89% Impervious Runoff Depth>1.46"
Tc=6.0 min CN=69 Runoff=0.45 cfs 0.033 af

Subcatchment202S: TO FB201 Runoff Area=269,260 sf 3.65% Impervious Runoff Depth>0.75"
Flow Length=1,420' Tc=25.9 min UI Adjusted CN=57 Runoff=2.53 cfs 0.385 af

Subcatchment203S: BLDG. 14 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>4.05"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.009 af

Subcatchment204S: TO IB201 Runoff Area=59,400 sf 0.00% Impervious Runoff Depth>0.70"
Flow Length=539' Tc=14.0 min CN=56 Runoff=0.62 cfs 0.080 af

Subcatchment205S: TO CB201 Runoff Area=13,300 sf 81.28% Impervious Runoff Depth>3.30"
Tc=6.0 min CN=91 Runoff=1.14 cfs 0.084 af

Subcatchment206S: TO FES201 Runoff Area=35,280 sf 17.55% Impervious Runoff Depth>1.20"
Flow Length=238' Tc=7.0 min UI Adjusted CN=65 Runoff=1.01 cfs 0.081 af

Subcatchment207S: TO CB202 Runoff Area=12,730 sf 84.17% Impervious Runoff Depth>3.40"
Tc=6.0 min CN=92 Runoff=1.12 cfs 0.083 af

Subcatchment208S: TO CB203 Runoff Area=1,525 sf 66.89% Impervious Runoff Depth>2.82"
Tc=6.0 min CN=86 Runoff=0.11 cfs 0.008 af

Subcatchment209S: TO CB204 Runoff Area=5,745 sf 79.81% Impervious Runoff Depth>3.30"
Tc=6.0 min CN=91 Runoff=0.49 cfs 0.036 af

Subcatchment210S: TO CB205 Runoff Area=4,970 sf 29.78% Impervious Runoff Depth>1.67"
Tc=6.0 min CN=72 Runoff=0.22 cfs 0.016 af

Subcatchment211S: TO FES202 Runoff Area=49,550 sf 28.51% Impervious Runoff Depth>1.46"
Flow Length=297' Tc=7.0 min UI Adjusted CN=69 Runoff=1.80 cfs 0.139 af

Subcatchment212S: TO FES204 Runoff Area=56,865 sf 39.00% Impervious Runoff Depth>1.82"
Flow Length=244' Tc=7.0 min CN=74 Runoff=2.65 cfs 0.198 af

Subcatchment213S: TO CB208 Runoff Area=11,165 sf 85.80% Impervious Runoff Depth>3.51"
Tc=6.0 min CN=93 Runoff=1.00 cfs 0.075 af

Subcatchment214S: TO HW205 Runoff Area=18,535 sf 26.60% Impervious Runoff Depth>1.46"
Tc=6.0 min UI Adjusted CN=69 Runoff=0.70 cfs 0.052 af

Subcatchment215S: TO CB209 Runoff Area=31,940 sf 12.40% Impervious Runoff Depth>1.14"
Tc=6.0 min CN=64 Runoff=0.89 cfs 0.070 af

Subcatchment 216S: TO DB201 Runoff Area=91,260 sf 12.17% Impervious Runoff Depth>1.20"
Flow Length=940' Tc=11.2 min CN=65 Runoff=2.26 cfs 0.210 af

Subcatchment 217S: TO DI2109 Runoff Area=59,690 sf 9.16% Impervious Runoff Depth>0.80"
Flow Length=420' Tc=10.4 min CN=58 Runoff=0.86 cfs 0.092 af

Subcatchment 301S: TO HW101 Runoff Area=8,820 sf 26.42% Impervious Runoff Depth>1.60"
Tc=6.0 min CN=71 Runoff=0.37 cfs 0.027 af

Subcatchment 302S: TO TS-1 Runoff Area=25,690 sf 9.19% Impervious Runoff Depth>1.02"
Flow Length=276' Tc=8.8 min CN=62 Runoff=0.56 cfs 0.050 af

Subcatchment 303S: TO DB101 Runoff Area=35,390 sf 5.43% Impervious Runoff Depth>0.80"
Flow Length=317' Tc=7.8 min CN=58 Runoff=0.56 cfs 0.054 af

Subcatchment 304S: TO DI2102 Runoff Area=28,310 sf 24.73% Impervious Runoff Depth>1.08"
Flow Length=213' Tc=8.2 min CN=63 Runoff=0.68 cfs 0.059 af

Subcatchment 401S: TO HW401 Runoff Area=225,780 sf 1.06% Impervious Runoff Depth>0.70"
Flow Length=1,300' Tc=27.5 min CN=56 Runoff=1.87 cfs 0.301 af

Subcatchment 402S: TO CB401 Runoff Area=13,330 sf 80.95% Impervious Runoff Depth>3.30"
Tc=6.0 min CN=91 Runoff=1.14 cfs 0.084 af

Subcatchment 403S: TO CB402 Runoff Area=12,475 sf 85.13% Impervious Runoff Depth>3.40"
Tc=6.0 min CN=92 Runoff=1.10 cfs 0.081 af

Subcatchment 404S: BLDG. 22 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>4.05"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.009 af

Subcatchment 405S: TO FES401 Runoff Area=40,315 sf 2.98% Impervious Runoff Depth>0.80"
Flow Length=260' Tc=13.1 min CN=58 Runoff=0.53 cfs 0.062 af

Subcatchment 406S: TO CB403 Runoff Area=6,290 sf 84.90% Impervious Runoff Depth>3.40"
Tc=6.0 min CN=92 Runoff=0.55 cfs 0.041 af

Subcatchment 407S: BLDG. 21 ROOF Runoff Area=1,200 sf 100.00% Impervious Runoff Depth>4.05"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.009 af

Subcatchment 408S: TO IB401 Runoff Area=63,210 sf 4.49% Impervious Runoff Depth>0.86"
Flow Length=76' Tc=8.5 min CN=59 Runoff=1.07 cfs 0.104 af

Subcatchment 409S: TO HW404 Runoff Area=8,990 sf 32.04% Impervious Runoff Depth>1.74"
Tc=6.0 min CN=73 Runoff=0.41 cfs 0.030 af

Subcatchment 410S: TO CB404 Runoff Area=11,390 sf 84.37% Impervious Runoff Depth>3.51"
Tc=6.0 min CN=93 Runoff=1.02 cfs 0.076 af

Subcatchment 411S: TO CB405 Runoff Area=11,930 sf 80.72% Impervious Runoff Depth>3.40"
Tc=6.0 min CN=92 Runoff=1.05 cfs 0.078 af

Subcatchment 412S: T0 CB406 Runoff Area=18,840 sf 13.61% Impervious Runoff Depth>1.20"
Flow Length=382' Tc=8.7 min UI Adjusted CN=65 Runoff=0.51 cfs 0.043 af

Subcatchment 413S: TO CB407 Runoff Area=8,910 sf 62.63% Impervious Runoff Depth>2.91"
Tc=6.0 min CN=87 Runoff=0.69 cfs 0.050 af

Subcatchment 414S: TO CB408 Runoff Area=8,210 sf 82.18% Impervious Runoff Depth>3.40"
Tc=6.0 min CN=92 Runoff=0.72 cfs 0.053 af

Subcatchment 415S: TO IB402 Runoff Area=18,260 sf 7.01% Impervious Runoff Depth>1.03"
Tc=6.0 min UI Adjusted CN=62 Runoff=0.44 cfs 0.036 af

Subcatchment 416S: TO 30" RCP Runoff Area=1,440,650 sf 1.01% Impervious Runoff Depth>0.65"
Flow Length=3,260' Tc=29.7 min CN=55 Runoff=10.32 cfs 1.783 af

Reach 101R: TT-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=680.0' S=0.1176 '/' Capacity=29.75 cfs Outflow=0.00 cfs 0.000 af

Reach 201R: RD14.1 Avg. Flow Depth=0.14' Max Vel=2.65 fps Inflow=0.12 cfs 0.009 af
6.0" Round Pipe n=0.013 L=125.0' S=0.0160 '/' Capacity=0.71 cfs Outflow=0.11 cfs 0.009 af

Reach 202R: CS-1 Avg. Flow Depth=0.23' Max Vel=2.60 fps Inflow=1.49 cfs 0.382 af
n=0.069 L=370.0' S=0.1354 '/' Capacity=53.80 cfs Outflow=1.49 cfs 0.381 af

Reach 203R: CS-2 Avg. Flow Depth=0.24' Max Vel=1.69 fps Inflow=1.49 cfs 0.381 af
n=0.035 L=280.0' S=0.0140 '/' Capacity=52.72 cfs Outflow=1.48 cfs 0.379 af

Reach 204R: CS-3A Avg. Flow Depth=0.30' Max Vel=1.26 fps Inflow=1.48 cfs 0.379 af
n=0.035 L=170.0' S=0.0060 '/' Capacity=34.51 cfs Outflow=1.48 cfs 0.378 af

Reach 205R: CS-3B Avg. Flow Depth=0.31' Max Vel=2.02 fps Inflow=2.26 cfs 0.589 af
n=0.069 L=120.0' S=0.0542 '/' Capacity=42.89 cfs Outflow=2.25 cfs 0.588 af

Reach 206R: TT-2 Avg. Flow Depth=0.35' Max Vel=3.04 fps Inflow=1.79 cfs 0.139 af
n=0.050 L=200.0' S=0.0780 '/' Capacity=69.50 cfs Outflow=1.78 cfs 0.139 af

Reach 208R: TS-2 Avg. Flow Depth=0.67' Max Vel=0.46 fps Inflow=2.45 cfs 1.194 af
n=0.150 L=160.0' S=0.0050 '/' Capacity=5.11 cfs Outflow=2.45 cfs 1.188 af

Reach 301R: TS-1 Avg. Flow Depth=0.25' Max Vel=1.23 fps Inflow=0.90 cfs 0.077 af
n=0.035 L=160.0' S=0.0075 '/' Capacity=13.09 cfs Outflow=0.87 cfs 0.077 af

Reach 401R: RD22.1 Avg. Flow Depth=0.13' Max Vel=2.87 fps Inflow=0.12 cfs 0.009 af
6.0" Round Pipe n=0.013 L=105.0' S=0.0200 '/' Capacity=0.79 cfs Outflow=0.11 cfs 0.009 af

Reach 402R: RD21.1 Avg. Flow Depth=0.12' Max Vel=3.32 fps Inflow=0.12 cfs 0.009 af
6.0" Round Pipe n=0.013 L=123.0' S=0.0301 '/' Capacity=0.97 cfs Outflow=0.11 cfs 0.009 af

Reach 403R: SS-1 Avg. Flow Depth=0.36' Max Vel=1.87 fps Inflow=3.49 cfs 0.588 af
n=0.035 L=120.0' S=0.0100 '/' Capacity=95.96 cfs Outflow=3.46 cfs 0.587 af

Reach 404R: TT-3 Avg. Flow Depth=0.24' Max Vel=2.86 fps Inflow=1.31 cfs 0.511 af
n=0.050 L=465.0' S=0.1118 '/' Capacity=29.00 cfs Outflow=1.31 cfs 0.510 af

Reach 406R: TT-4 Avg. Flow Depth=0.18' Max Vel=1.40 fps Inflow=0.57 cfs 0.211 af
n=0.070 L=160.0' S=0.0750 '/' Capacity=23.05 cfs Outflow=0.57 cfs 0.210 af

Reach 408R: EXIST. CHANNEL Avg. Flow Depth=0.18' Max Vel=2.53 fps Inflow=1.86 cfs 0.720 af
n=0.040 L=546.0' S=0.0769 '/' Capacity=327.19 cfs Outflow=1.86 cfs 0.718 af

Pond 201P: HW201 Peak Elev=399.32' Storage=34 cf Inflow=0.45 cfs 0.033 af
15.0" Round Culvert n=0.013 L=90.0' S=0.0080 '/' Outflow=0.43 cfs 0.033 af

Pond 202P: FB201 Peak Elev=396.06' Storage=877 cf Inflow=2.69 cfs 0.418 af
Outflow=2.69 cfs 0.399 af

Pond 203P: IB201 Peak Elev=395.55' Storage=5,158 cf Inflow=3.22 cfs 0.487 af
Discarded=0.03 cfs 0.028 af Primary=1.49 cfs 0.382 af Secondary=0.00 cfs 0.000 af Outflow=1.52 cfs 0.409 af

Pond 204P: CB201 Peak Elev=391.81' Inflow=1.14 cfs 0.084 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0150 '/' Outflow=1.14 cfs 0.084 af

Pond 205P: FES201 Peak Elev=394.65' Storage=54 cf Inflow=1.01 cfs 0.081 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0500 '/' Outflow=0.99 cfs 0.081 af

Pond 206P: CB202 Peak Elev=391.70' Inflow=3.16 cfs 0.248 af
12.0" Round Culvert n=0.013 L=95.0' S=0.0500 '/' Outflow=3.16 cfs 0.248 af

Pond 207P: CB203 Peak Elev=386.75' Inflow=3.27 cfs 0.256 af
12.0" Round Culvert n=0.013 L=27.0' S=0.0700 '/' Outflow=3.27 cfs 0.256 af

Pond 208P: CB204 Peak Elev=384.39' Inflow=3.76 cfs 0.293 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0960 '/' Outflow=3.76 cfs 0.293 af

Pond 209P: CB205 Peak Elev=371.08' Inflow=3.98 cfs 0.309 af
15.0" Round Culvert n=0.013 L=220.0' S=0.1000 '/' Outflow=3.98 cfs 0.309 af

Pond 210P: FES202 Peak Elev=368.20' Storage=36 cf Inflow=1.80 cfs 0.139 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0150 '/' Outflow=1.79 cfs 0.139 af

Pond 211P: FES204 Peak Elev=352.28' Storage=194 cf Inflow=4.38 cfs 0.336 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0400 '/' Outflow=4.22 cfs 0.336 af

Pond 212P: CB208 Peak Elev=351.06' Inflow=5.06 cfs 0.411 af
15.0" Round Culvert n=0.013 L=100.0' S=0.0170 '/' Outflow=5.06 cfs 0.411 af

Pond 213P: DMH1 Peak Elev=349.61' Inflow=8.96 cfs 0.720 af
18.0" Round Culvert n=0.013 L=111.0' S=0.0320 '/' Outflow=8.96 cfs 0.720 af

Pond 214P: HW205 Peak Elev=346.06' Inflow=0.70 cfs 0.052 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0300 '/' Outflow=0.70 cfs 0.052 af

Pond 215P: DMH2 Peak Elev=346.04' Inflow=9.65 cfs 0.772 af
18.0" Round Culvert n=0.013 L=100.0' S=0.1150 '/' Outflow=9.65 cfs 0.772 af

Pond 216P: FB202 Peak Elev=332.78' Storage=2,987 cf Inflow=9.65 cfs 0.772 af
Outflow=9.51 cfs 0.771 af

Pond 217P: CB209 Peak Elev=326.48' Inflow=0.89 cfs 0.070 af
12.0" Round Culvert n=0.013 L=63.0' S=0.0270 '/' Outflow=0.89 cfs 0.070 af

Pond 218P: FB203 Peak Elev=326.11' Storage=1,050 cf Inflow=0.89 cfs 0.070 af
Outflow=0.66 cfs 0.054 af

Pond 219P: DB201 Peak Elev=326.12' Storage=19,579 cf Inflow=11.50 cfs 1.412 af
Primary=2.45 cfs 1.194 af Secondary=0.00 cfs 0.000 af Outflow=2.45 cfs 1.194 af

Pond 301P: HW101 Peak Elev=310.58' Inflow=0.37 cfs 0.027 af
15.0" Round Culvert n=0.013 L=38.0' S=0.0500 '/' Outflow=0.37 cfs 0.027 af

Pond 302P: DB101 Peak Elev=305.41' Storage=1,466 cf Inflow=1.42 cfs 0.132 af
Primary=0.51 cfs 0.127 af Secondary=0.00 cfs 0.000 af Outflow=0.51 cfs 0.127 af

Pond 303P: DMH7 Peak Elev=303.72' Inflow=0.81 cfs 0.186 af
15.0" Round Culvert n=0.012 L=230.0' S=0.0100 '/' Outflow=0.81 cfs 0.186 af

Pond 401P: HW401 Peak Elev=425.67' Inflow=1.87 cfs 0.301 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0350 '/' Outflow=1.87 cfs 0.301 af

Pond 402P: CB401 Peak Elev=423.27' Inflow=2.14 cfs 0.385 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0100 '/' Outflow=2.14 cfs 0.385 af

Pond 403P: CB402 Peak Elev=422.87' Inflow=2.44 cfs 0.466 af
18.0" Round Culvert n=0.013 L=62.0' S=0.0048 '/' Outflow=2.44 cfs 0.466 af

Pond 404P: DMH5 Peak Elev=422.42' Inflow=2.52 cfs 0.476 af
18.0" Round Culvert n=0.013 L=250.0' S=0.0060 '/' Outflow=2.52 cfs 0.476 af

Pond 405P: FES401 Peak Elev=432.39' Inflow=0.53 cfs 0.062 af
12.0" Round Culvert n=0.013 L=75.0' S=0.0500 '/' Outflow=0.53 cfs 0.062 af

Pond 406P: CB403 Peak Elev=428.48' Inflow=0.89 cfs 0.103 af
12.0" Round Culvert n=0.013 L=90.0' S=0.0800 '/' Outflow=0.89 cfs 0.103 af

Pond 408P: DMH6 Peak Elev=420.96' Inflow=3.49 cfs 0.588 af
18.0" Round Culvert n=0.013 L=25.0' S=0.0120 '/' Outflow=3.49 cfs 0.588 af

Pond 409P: IB401 Peak Elev=400.59' Storage=10,844 cf Inflow=4.50 cfs 0.691 af
Discarded=0.04 cfs 0.044 af Primary=1.31 cfs 0.511 af Outflow=1.35 cfs 0.555 af

Pond 410P: HW404 Peak Elev=368.30' Inflow=0.41 cfs 0.030 af
15.0" Round Culvert n=0.013 L=225.0' S=0.0260 '/' Outflow=0.41 cfs 0.030 af

Pond 411P: CB404 Peak Elev=363.32' Inflow=1.02 cfs 0.076 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0200 '/' Outflow=1.02 cfs 0.076 af

Pond 412P: CB405 Peak Elev=362.69' Inflow=2.48 cfs 0.184 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0200 '/' Outflow=2.48 cfs 0.184 af

Pond 413P: DMH3 Peak Elev=361.29' Inflow=2.48 cfs 0.184 af
15.0" Round Culvert n=0.013 L=102.0' S=0.0172 '/' Outflow=2.48 cfs 0.184 af

Pond 414P: CB406 Peak Elev=360.44' Inflow=0.51 cfs 0.043 af
12.0" Round Culvert n=0.013 L=85.0' S=0.0060 '/' Outflow=0.51 cfs 0.043 af

Pond 415P: CB407 Peak Elev=359.99' Inflow=1.15 cfs 0.093 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0200 '/' Outflow=1.15 cfs 0.093 af

Pond 416P: CB408 Peak Elev=359.58' Inflow=4.34 cfs 0.331 af
18.0" Round Culvert n=0.013 L=40.0' S=0.0100 '/' Outflow=4.34 cfs 0.331 af

Pond 417P: FB401 Peak Elev=356.12' Storage=1,148 cf Inflow=4.34 cfs 0.331 af
Outflow=4.33 cfs 0.306 af

Pond 418P: IB402 Peak Elev=355.69' Storage=7,272 cf Inflow=4.77 cfs 0.342 af
Discarded=0.04 cfs 0.036 af Primary=0.57 cfs 0.211 af Secondary=0.00 cfs 0.000 af Outflow=0.60 cfs 0.247 af

Pond 419P: DMH4 Peak Elev=354.81' Inflow=0.57 cfs 0.211 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0050 '/' Outflow=0.57 cfs 0.211 af

Pond E1P: DI2111 Peak Elev=312.57' Inflow=1.41 cfs 0.161 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=1.41 cfs 0.161 af

Pond E2P: DI2109 Peak Elev=308.81' Inflow=2.59 cfs 1.279 af
15.0" Round Culvert n=0.013 L=200.0' S=0.0100 '/' Outflow=2.59 cfs 1.279 af

Pond E3P: DI2102 Peak Elev=304.40' Inflow=0.68 cfs 0.059 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0100 '/' Outflow=0.68 cfs 0.059 af

Pond E4P: 30" RCP Peak Elev=295.94' Inflow=11.52 cfs 2.501 af
30.0" Round Culvert n=0.012 L=63.0' S=0.0540 '/' Outflow=11.52 cfs 2.501 af

Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK Inflow=15.16 cfs 4.127 af
Primary=15.16 cfs 4.127 af

Total Runoff Area = 64.783 ac Runoff Volume = 4.842 af Average Runoff Depth = 0.90"
91.85% Pervious = 59.505 ac 8.15% Impervious = 5.277 ac

Summary for Subcatchment 101S: TO DI2111

Runoff = 1.41 cfs @ 12.23 hrs, Volume= 0.161 af, Depth> 0.86"
Routed to Pond E1P : DI2111

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
3,660	98	Paved parking, HSG A
1,860	98	Paved parking, HSG B
2,090	98	Roofs, HSG B
3,140	39	>75% Grass cover, Good, HSG A
19,930	61	>75% Grass cover, Good, HSG B
67,790	55	Woods, Good, HSG B
98,470	59	Weighted Average
90,860		92.27% Pervious Area
7,610		7.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	70	0.2300	0.18		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
7.4	700	0.1000	1.58		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
13.8	770	Total			

Summary for Subcatchment 201S: TO HW201

Runoff = 0.45 cfs @ 12.10 hrs, Volume= 0.033 af, Depth> 1.46"
Routed to Pond 201P : HW201

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
3,070	98	Paved parking, HSG B
6,600	61	>75% Grass cover, Good, HSG B
2,190	55	Woods, Good, HSG B
11,860	69	Weighted Average
8,790		74.11% Pervious Area
3,070		25.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 202S: TO FB201

Runoff = 2.53 cfs @ 12.46 hrs, Volume= 0.385 af, Depth> 0.75"
Routed to Pond 202P : FB201

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Adj	Description
7,440	98		Paved parking, HSG B
2,400	98		Unconnected roofs, HSG B
49,420	61		>75% Grass cover, Good, HSG B
210,000	55		Woods, Good, HSG B
269,260	58	57	Weighted Average, UI Adjusted
259,420			96.35% Pervious Area
9,840			3.65% Impervious Area
2,400			24.39% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
9.8	1,020	0.1200	1.73		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	300	0.0730	9.34	448.44	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=4.00' Z= 3.0 & 2.0 '/' Top.W=22.00' n= 0.069 Riprap, 6-inch
25.9	1,420	Total			

Summary for Subcatchment 203S: BLDG. 14 ROOF WEST

Runoff = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af, Depth> 4.05"
Routed to Reach 201R : RD14.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
1,200	98	Roofs, HSG B
1,200		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 204S: TO IB201

Runoff = 0.62 cfs @ 12.25 hrs, Volume= 0.080 af, Depth> 0.70"
Routed to Pond 203P : IB201

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
14,400	61	>75% Grass cover, Good, HSG B
45,000	55	Woods, Good, HSG B
59,400	56	Weighted Average
59,400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.1200	0.15		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
2.7	325	0.1667	2.04		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.3	114	0.0530	6.42	42.77	**Parabolic Channel, C-D** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.040 Mountain streams
14.0	539	Total			

Summary for Subcatchment 205S: TO CB201

Runoff = 1.14 cfs @ 12.09 hrs, Volume= 0.084 af, Depth> 3.30"
Routed to Pond 204P : CB201

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
2,400	98	Roofs, HSG B
8,410	98	Paved parking, HSG B
2,490	61	>75% Grass cover, Good, HSG B
13,300	91	Weighted Average
2,490		18.72% Pervious Area
10,810		81.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 206S: TO FES201

Runoff = 1.01 cfs @ 12.11 hrs, Volume= 0.081 af, Depth> 1.20"
Routed to Pond 205P : FES201

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Adj	Description
3,600	98		Unconnected roofs, HSG B
2,590	98		Paved parking, HSG B
28,000	61		>75% Grass cover, Good, HSG B
1,090	55		Woods, Good, HSG B
35,280	67	65	Weighted Average, UI Adjusted
29,090			82.45% Pervious Area
6,190			17.55% Impervious Area
3,600			58.16% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	63	0.2000	0.17		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
0.2	35	0.3000	3.83		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.6	140	0.0180	4.09	18.40	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=1.00' Z= 2.0 & 3.0 '/' Top.W=7.00' n= 0.035 High grass
7.0	238	Total			

Summary for Subcatchment 207S: TO CB202

Runoff = 1.12 cfs @ 12.08 hrs, Volume= 0.083 af, Depth> 3.40"
Routed to Pond 206P : CB202

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
2,400	98	Roofs, HSG B
8,315	98	Paved parking, HSG B
2,015	61	>75% Grass cover, Good, HSG B
12,730	92	Weighted Average
2,015		15.83% Pervious Area
10,715		84.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 208S: TO CB203

Runoff = 0.11 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 2.82"
Routed to Pond 207P : CB203

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
1,020	98	Paved parking, HSG B
505	61	>75% Grass cover, Good, HSG B
1,525	86	Weighted Average
505		33.11% Pervious Area
1,020		66.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 209S: TO CB204

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.036 af, Depth> 3.30"
Routed to Pond 208P : CB204

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
730	98	Roofs, HSG B
3,855	98	Paved parking, HSG B
1,160	61	>75% Grass cover, Good, HSG B
5,745	91	Weighted Average
1,160		20.19% Pervious Area
4,585		79.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 210S: TO CB205

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.016 af, Depth> 1.67"
Routed to Pond 209P : CB205

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
1,480	98	Paved parking, HSG B
3,490	61	>75% Grass cover, Good, HSG B
4,970	72	Weighted Average
3,490		70.22% Pervious Area
1,480		29.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 211S: TO FES202

Runoff = 1.80 cfs @ 12.11 hrs, Volume= 0.139 af, Depth> 1.46"
Routed to Pond 210P : FES202

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Adj	Description
6,425	98		Unconnected roofs, HSG B
7,700	98		Paved parking, HSG B
33,925	61		>75% Grass cover, Good, HSG B
1,500	55		Woods, Good, HSG B
49,550	71	69	Weighted Average, UI Adjusted
35,425			71.49% Pervious Area
14,125			28.51% Impervious Area
6,425			45.49% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	33	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
0.3	74	0.3300	4.02		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.5	190	0.0200	6.38	89.25	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=2.00' Z= 2.0 & 3.0 '/' Top.W=12.00' n= 0.035 High grass
7.0	297	Total			

Summary for Subcatchment 212S: TO FES204

Runoff = 2.65 cfs @ 12.11 hrs, Volume= 0.198 af, Depth> 1.82"
Routed to Pond 211P : FES204

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
4,800	98	Unconnected roofs, HSG B
17,380	98	Paved parking, HSG B
25,685	61	>75% Grass cover, Good, HSG B
9,000	55	Woods, Good, HSG B
56,865	74	Weighted Average
34,685		61.00% Pervious Area
22,180		39.00% Impervious Area
4,800		21.64% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	54	0.1850	0.16		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
1.0	100	0.1200	1.73		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.3	90	0.0250	5.12	20.49	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=2.00' n= 0.035 High grass
7.0	244	Total			

Summary for Subcatchment 213S: TO CB208

Runoff = 1.00 cfs @ 12.08 hrs, Volume= 0.075 af, Depth> 3.51"
Routed to Pond 212P : CB208

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
2,560	98	Roofs, HSG B
7,020	98	Paved parking, HSG B
1,585	61	>75% Grass cover, Good, HSG B
11,165	93	Weighted Average
1,585		14.20% Pervious Area
9,580		85.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 214S: TO HW205

Runoff = 0.70 cfs @ 12.10 hrs, Volume= 0.052 af, Depth> 1.46"
Routed to Pond 214P : HW205

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Adj	Description
975	98		Unconnected roofs, HSG B
3,955	98		Paved parking, HSG B
12,405	61		>75% Grass cover, Good, HSG B
1,200	55		Woods, Good, HSG B
18,535	70	69	Weighted Average, UI Adjusted
13,605			73.40% Pervious Area
4,930			26.60% Impervious Area
975			19.78% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 215S: TO CB209

Runoff = 0.89 cfs @ 12.10 hrs, Volume= 0.070 af, Depth> 1.14"
Routed to Pond 217P : CB209

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
810	98	Unconnected roofs, HSG B
780	98	Unconnected roofs, HSG D
2,370	98	Paved parking, HSG B
19,000	61	>75% Grass cover, Good, HSG B
750	80	>75% Grass cover, Good, HSG D
8,230	55	Woods, Good, HSG B
31,940	64	Weighted Average
27,980		87.60% Pervious Area
3,960		12.40% Impervious Area
1,590		40.15% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 216S: TO DB201

Runoff = 2.26 cfs @ 12.17 hrs, Volume= 0.210 af, Depth> 1.20"
Routed to Reach 205R : CS-3B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
2,860	98	Unconnected roofs, HSG B
8,250	98	Paved parking, HSG B
77,600	61	>75% Grass cover, Good, HSG B
980	70	Woods, Good, HSG C
1,570	55	Woods, Good, HSG B
91,260	65	Weighted Average
80,150		87.83% Pervious Area
11,110		12.17% Impervious Area
2,860		25.74% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0200	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
0.3	50	0.0300	2.60		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.6	270	0.1070	7.47	119.54	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.069 Riprap, 6-inch
1.4	470	0.0140	5.55	88.72	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=3.00' D=2.00' Z= 3.0 & 2.0 '/' Top.W=13.00' n= 0.035 High grass
0.3	100	0.0800	6.48	77.72	**Trap/Vee/Rect Channel Flow, E-F** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.069 Riprap, 6-inch
11.2	940	Total			

Summary for Subcatchment 217S: TO DI2109

Runoff = 0.86 cfs @ 12.17 hrs, Volume= 0.092 af, Depth> 0.80"
Routed to Pond E2P : DI2109

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
5,470	98	Paved parking, HSG A
6,630	39	>75% Grass cover, Good, HSG A
13,090	61	>75% Grass cover, Good, HSG B
34,500	55	Woods, Good, HSG B
59,690	58	Weighted Average
54,220		90.84% Pervious Area
5,470		9.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	60	0.1200	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
2.9	250	0.0800	1.41		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	110	0.0140	8.27	628.48	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=3.00' D=4.00' Z= 4.0 '/' Top.W=35.00' n= 0.035 High grass
10.4	420	Total			

Summary for Subcatchment 301S: TO HW101

Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af, Depth> 1.60"
Routed to Pond 301P : HW101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
2,330	98	Paved parking, HSG B
6,490	61	>75% Grass cover, Good, HSG B
8,820	71	Weighted Average
6,490		73.58% Pervious Area
2,330		26.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 302S: TO TS-1

Runoff = 0.56 cfs @ 12.14 hrs, Volume= 0.050 af, Depth> 1.02"
Routed to Reach 301R : TS-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
2,360	98	Paved parking, HSG B
15,130	61	>75% Grass cover, Good, HSG B
8,200	55	Woods, Good, HSG B
25,690	62	Weighted Average
23,330		90.81% Pervious Area
2,360		9.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	50	0.0700	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
0.7	110	0.2500	2.50		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.3	116	0.0800	7.28	21.83	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=0.00' D=1.00' Z= 2.0 & 4.0 '/' Top.W=6.00' n= 0.035 High grass
8.8	276	Total			

Summary for Subcatchment 303S: TO DB101

Runoff = 0.56 cfs @ 12.14 hrs, Volume= 0.054 af, Depth> 0.80"
Routed to Pond 302P : DB101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
630	98	Paved parking, HSG B
1,290	98	Paved parking, HSG A
1,380	39	>75% Grass cover, Good, HSG A
10,390	61	>75% Grass cover, Good, HSG B
21,700	55	Woods, Good, HSG B
35,390	58	Weighted Average
33,470		94.57% Pervious Area
1,920		5.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	40	0.1000	0.12		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
1.7	220	0.1818	2.13		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.4	57	0.0075	2.62	13.09	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=1.00' Z= 3.0 '/' Top.W=8.00' n= 0.035 High grass
7.8	317	Total			

Summary for Subcatchment 304S: TO DI2102

Runoff = 0.68 cfs @ 12.13 hrs, Volume= 0.059 af, Depth> 1.08"
Routed to Pond E3P : DI2102

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
570	98	Paved parking, HSG B
6,430	98	Paved parking, HSG A
6,670	39	>75% Grass cover, Good, HSG A
7,700	61	>75% Grass cover, Good, HSG B
6,940	55	Woods, Good, HSG B
28,310	63	Weighted Average
21,310		75.27% Pervious Area
7,000		24.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0800	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
0.5	56	0.1500	1.94		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.3	107	0.0160	5.66	113.17	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=2.00' Z= 4.0 '/' Top.W=18.00' n= 0.035 High grass
8.2	213	Total			

Summary for Subcatchment 401S: TO HW401

Runoff = 1.87 cfs @ 12.50 hrs, Volume= 0.301 af, Depth> 0.70"
Routed to Pond 401P : HW401

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
2,400	98	Unconnected roofs, HSG B
39,180	61	>75% Grass cover, Good, HSG B
184,200	55	Woods, Good, HSG B
225,780	56	Weighted Average
223,380		98.94% Pervious Area
2,400		1.06% Impervious Area
2,400		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
11.9	1,200	0.1125	1.68		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
27.5	1,300	Total			

Summary for Subcatchment 402S: TO CB401

Runoff = 1.14 cfs @ 12.09 hrs, Volume= 0.084 af, Depth> 3.30"
Routed to Pond 402P : CB401

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
8,390	98	Paved parking, HSG B
2,400	98	Roofs, HSG B
2,540	61	>75% Grass cover, Good, HSG B
13,330	91	Weighted Average
2,540		19.05% Pervious Area
10,790		80.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 403S: TO CB402

Runoff = 1.10 cfs @ 12.08 hrs, Volume= 0.081 af, Depth> 3.40"
Routed to Pond 403P : CB402

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
8,220	98	Paved parking, HSG B
2,400	98	Roofs, HSG B
1,855	61	>75% Grass cover, Good, HSG B
12,475	92	Weighted Average
1,855		14.87% Pervious Area
10,620		85.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 404S: BLDG. 22 ROOF WEST

Runoff = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af, Depth> 4.05"
Routed to Reach 401R : RD22.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
1,200	98	Roofs, HSG B
1,200		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 405S: TO FES401

Runoff = 0.53 cfs @ 12.22 hrs, Volume= 0.062 af, Depth> 0.80"
Routed to Pond 405P : FES401

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
1,200	98	Unconnected roofs, HSG B
14,915	61	>75% Grass cover, Good, HSG B
24,200	55	Woods, Good, HSG B
40,315	58	Weighted Average
39,115		97.02% Pervious Area
1,200		2.98% Impervious Area
1,200		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0250	0.07		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
1.1	110	0.1100	1.66		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	100	0.0220	6.69	93.61	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=2.00' Z= 3.0 & 2.0 '/' Top.W=12.00' n= 0.035 High grass
13.1	260	Total			

Summary for Subcatchment 406S: TO CB403

Runoff = 0.55 cfs @ 12.08 hrs, Volume= 0.041 af, Depth> 3.40"
Routed to Pond 406P : CB403

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
1,200	98	Roofs, HSG B
4,140	98	Paved parking, HSG B
950	61	>75% Grass cover, Good, HSG B
6,290	92	Weighted Average
950		15.10% Pervious Area
5,340		84.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 407S: BLDG. 21 ROOF WEST

Runoff = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af, Depth> 4.05"
Routed to Reach 402R : RD21.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
1,200	98	Roofs, HSG B
1,200		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 408S: TO IB401

Runoff = 1.07 cfs @ 12.14 hrs, Volume= 0.104 af, Depth> 0.86"
Routed to Pond 409P : IB401

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
2,840	98	Paved parking, HSG B
26,370	61	>75% Grass cover, Good, HSG B
34,000	55	Woods, Good, HSG B
63,210	59	Weighted Average
60,370		95.51% Pervious Area
2,840		4.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0600	0.10		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
0.2	26	0.1500	1.94		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
8.5	76	Total			

Summary for Subcatchment 409S: TO HW404

Runoff = 0.41 cfs @ 12.09 hrs, Volume= 0.030 af, Depth> 1.74"
Routed to Pond 410P : HW404

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
2,880	98	Paved parking, HSG B
6,110	61	>75% Grass cover, Good, HSG B
8,990	73	Weighted Average
6,110		67.96% Pervious Area
2,880		32.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 410S: TO CB404

Runoff = 1.02 cfs @ 12.08 hrs, Volume= 0.076 af, Depth> 3.51"
Routed to Pond 411P : CB404

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
1,520	98	Roofs, HSG B
1,040	98	Roofs, HSG D
3,590	98	Paved parking, HSG B
3,460	98	Paved parking, HSG D
1,230	61	>75% Grass cover, Good, HSG B
550	80	>75% Grass cover, Good, HSG D
11,390	93	Weighted Average
1,780		15.63% Pervious Area
9,610		84.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 411S: TO CB405

Runoff = 1.05 cfs @ 12.08 hrs, Volume= 0.078 af, Depth> 3.40"
Routed to Pond 412P : CB405

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
1,520	98	Roofs, HSG B
1,040	98	Roofs, HSG D
3,980	98	Paved parking, HSG B
3,090	98	Paved parking, HSG D
1,830	61	>75% Grass cover, Good, HSG B
470	80	>75% Grass cover, Good, HSG D
11,930	92	Weighted Average
2,300		19.28% Pervious Area
9,630		80.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 412S: T0 CB406

Runoff = 0.51 cfs @ 12.14 hrs, Volume= 0.043 af, Depth> 1.20"
Routed to Pond 414P : CB406

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Adj	Description
1,620	98		Unconnected roofs, HSG B
945	98		Unconnected roofs, HSG D
14,585	61		>75% Grass cover, Good, HSG B
1,190	80		>75% Grass cover, Good, HSG D
500	55		Woods, Good, HSG B
18,840	67	65	Weighted Average, UI Adjusted
16,275			86.39% Pervious Area
2,565			13.61% Impervious Area
2,565			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	35	0.1400	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
0.2	47	0.3300	4.02		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.7	300	0.0280	7.54	105.60	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=2.00' Z= 2.0 & 3.0 '/' Top.W=12.00' n= 0.035 High grass
8.7	382	Total			

Summary for Subcatchment 413S: TO CB407

Runoff = 0.69 cfs @ 12.09 hrs, Volume= 0.050 af, Depth> 2.91"
Routed to Pond 415P : CB407

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
4,042	98	Paved parking, HSG B
258	98	Paved parking, HSG D
1,280	98	Roofs, HSG B
1,970	61	>75% Grass cover, Good, HSG B
1,360	80	>75% Grass cover, Good, HSG D
8,910	87	Weighted Average
3,330		37.37% Pervious Area
5,580		62.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 414S: TO CB408

Runoff = 0.72 cfs @ 12.08 hrs, Volume= 0.053 af, Depth> 3.40"
Routed to Pond 416P : CB408

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
227	98	Paved parking, HSG D
1,280	98	Roofs, HSG B
5,240	98	Paved parking, HSG B
1,400	61	>75% Grass cover, Good, HSG B
63	80	>75% Grass cover, Good, HSG D
8,210	92	Weighted Average
1,463		17.82% Pervious Area
6,747		82.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 415S: TO IB402

Runoff = 0.44 cfs @ 12.10 hrs, Volume= 0.036 af, Depth> 1.03"
Routed to Pond 418P : IB402

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Adj	Description
1,280	98		Unconnected roofs, HSG B
16,580	61		>75% Grass cover, Good, HSG B
400	55		Woods, Good, HSG B
18,260	63	62	Weighted Average, UI Adjusted
16,980			92.99% Pervious Area
1,280			7.01% Impervious Area
1,280			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 416S: TO 30" RCP

Runoff = 10.32 cfs @ 12.54 hrs, Volume= 1.783 af, Depth> 0.65"
Routed to Pond E4P : 30" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
12,590	98	Paved parking, HSG A
17,520	39	>75% Grass cover, Good, HSG A
8,270	30	Woods, Good, HSG A
75,155	61	>75% Grass cover, Good, HSG B
1,920	98	Paved parking, HSG B
1,865	70	Woods, Good, HSG C
1,320,000	55	Woods, Good, HSG B
3,330	77	Woods, Good, HSG D
1,440,650	55	Weighted Average
1,426,140		98.99% Pervious Area
14,510		1.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0500	0.11		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
10.2	1,060	0.1200	1.73		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
3.9	2,100	0.0780	9.07	362.77	**Parabolic Channel, C-D** W=20.00' D=3.00' Area=40.0 sf Perim=21.1' n= 0.070 Mountain streams w/large boulders
29.7	3,260	Total			

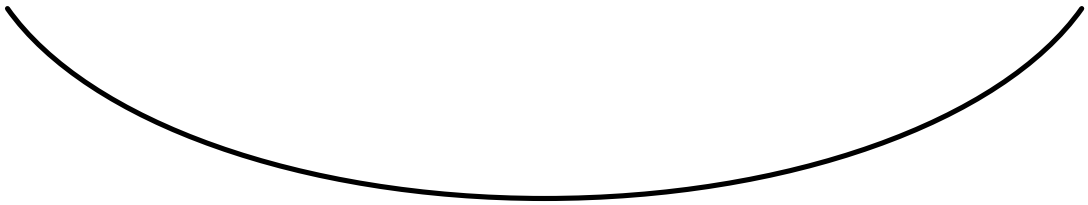
Summary for Reach 101R: TT-1

Inflow = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Pond E1P : DI2111

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 2.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 29.75 cfs

6.00' x 1.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 680.0' Slope= 0.1176 '/'
Inlet Invert= 396.00', Outlet Invert= 316.00'



Summary for Reach 201R: RD14.1

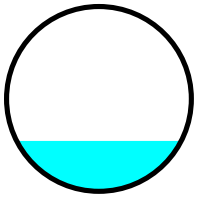
[52] Hint: Inlet/Outlet conditions not evaluated
[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.028 ac,100.00% Impervious, Inflow Depth > 4.05" for 10-Year event
Inflow = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.11 cfs @ 12.09 hrs, Volume= 0.009 af, Atten= 1%, Lag= 0.6 min
Routed to Pond 203P : IB201

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.65 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.90 fps, Avg. Travel Time= 2.3 min

Peak Storage= 5 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.14' , Surface Width= 0.44'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 0.71 cfs

6.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 125.0' Slope= 0.0160 '/'
Inlet Invert= 398.20', Outlet Invert= 396.20'



Summary for Reach 202R: CS-1

Inflow Area = 7.845 ac, 4.13% Impervious, Inflow Depth > 0.58" for 10-Year event
Inflow = 1.49 cfs @ 12.92 hrs, Volume= 0.382 af
Outflow = 1.49 cfs @ 12.95 hrs, Volume= 0.381 af, Atten= 0%, Lag= 1.8 min
Routed to Reach 203R : CS-2

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.60 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 1.56 fps, Avg. Travel Time= 4.0 min

Peak Storage= 211 cf @ 12.95 hrs
Average Depth at Peak Storage= 0.23' , Surface Width= 2.93'
Bank-Full Depth= 1.50' Flow Area= 7.5 sf, Capacity= 53.80 cfs

2.00' x 1.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 2.0 '/' Top Width= 8.00'
Length= 370.0' Slope= 0.1354 '/'
Inlet Invert= 390.50', Outlet Invert= 340.40'

Summary for Reach 203R: CS-2

[62] Hint: Exceeded Reach 202R OUTLET depth by 0.01' @ 13.24 hrs

Inflow Area = 7.845 ac, 4.13% Impervious, Inflow Depth > 0.58" for 10-Year event
Inflow = 1.49 cfs @ 12.95 hrs, Volume= 0.381 af
Outflow = 1.48 cfs @ 12.98 hrs, Volume= 0.379 af, Atten= 0%, Lag= 2.1 min
Routed to Reach 204R : CS-3A

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.69 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 1.01 fps, Avg. Travel Time= 4.6 min

Peak Storage= 245 cf @ 12.98 hrs
Average Depth at Peak Storage= 0.24' , Surface Width= 4.42'
Bank-Full Depth= 1.50' Flow Area= 11.3 sf, Capacity= 52.72 cfs

3.00' x 1.50' deep channel, n= 0.035 High grass
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 280.0' Slope= 0.0140 '/'
Inlet Invert= 340.40', Outlet Invert= 336.48'

‡

Summary for Reach 204R: CS-3A

[62] Hint: Exceeded Reach 203R OUTLET depth by 0.10' @ 13.08 hrs

Inflow Area = 7.845 ac, 4.13% Impervious, Inflow Depth > 0.58" for 10-Year event
Inflow = 1.48 cfs @ 12.98 hrs, Volume= 0.379 af
Outflow = 1.48 cfs @ 13.01 hrs, Volume= 0.378 af, Atten= 0%, Lag= 1.7 min
Routed to Reach 205R : CS-3B

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.26 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.77 fps, Avg. Travel Time= 3.7 min

Peak Storage= 198 cf @ 13.01 hrs
Average Depth at Peak Storage= 0.30' , Surface Width= 4.80'
Bank-Full Depth= 1.50' Flow Area= 11.3 sf, Capacity= 34.51 cfs

3.00' x 1.50' deep channel, n= 0.035 High grass
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 170.0' Slope= 0.0060 '/'
Inlet Invert= 336.52', Outlet Invert= 335.50'

‡

Summary for Reach 205R: CS-3B

[62] Hint: Exceeded Reach 204R OUTLET depth by 0.31' @ 12.18 hrs

Inflow Area = 9.940 ac, 5.82% Impervious, Inflow Depth > 0.71" for 10-Year event
Inflow = 2.26 cfs @ 12.17 hrs, Volume= 0.589 af
Outflow = 2.25 cfs @ 12.18 hrs, Volume= 0.588 af, Atten= 0%, Lag= 0.7 min
Routed to Pond 219P : DB201

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.02 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.14 fps, Avg. Travel Time= 1.8 min

Peak Storage= 134 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.31' , Surface Width= 4.24'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 42.89 cfs

3.00' x 1.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 2.0 '/' Top Width= 9.00'
Length= 120.0' Slope= 0.0542 '/'
Inlet Invert= 335.50', Outlet Invert= 329.00'

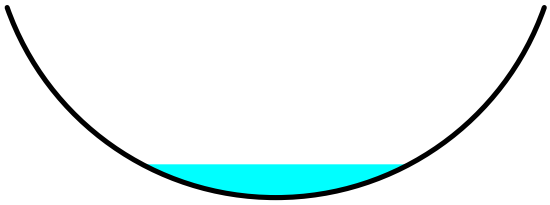
Summary for Reach 206R: TT-2

Inflow Area = 1.138 ac, 28.51% Impervious, Inflow Depth > 1.46" for 10-Year event
Inflow = 1.79 cfs @ 12.12 hrs, Volume= 0.139 af
Outflow = 1.78 cfs @ 12.13 hrs, Volume= 0.139 af, Atten= 1%, Lag= 0.8 min
Routed to Pond 211P : FES204

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.04 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 2.8 min

Peak Storage= 117 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.35' , Surface Width= 2.51'
Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 69.50 cfs

6.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 200.0' Slope= 0.0780 '/'
Inlet Invert= 366.60', Outlet Invert= 351.00'



Summary for Reach 208R: TS-2

Inflow Area = 15.486 ac, 17.02% Impervious, Inflow Depth > 0.93" for 10-Year event
Inflow = 2.45 cfs @ 13.47 hrs, Volume= 1.194 af
Outflow = 2.45 cfs @ 13.55 hrs, Volume= 1.188 af, Atten= 0%, Lag= 4.3 min
Routed to Pond E2P : DI2109

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.46 fps, Min. Travel Time= 5.8 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 10.6 min

Peak Storage= 861 cf @ 13.55 hrs
Average Depth at Peak Storage= 0.67' , Surface Width= 10.03'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 5.11 cfs

6.00' x 1.00' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 160.0' Slope= 0.0050 '/'
Inlet Invert= 320.30', Outlet Invert= 319.50'

‡

Summary for Reach 301R: TS-1

Inflow Area = 0.792 ac, 13.59% Impervious, Inflow Depth > 1.17" for 10-Year event
Inflow = 0.90 cfs @ 12.12 hrs, Volume= 0.077 af
Outflow = 0.87 cfs @ 12.15 hrs, Volume= 0.077 af, Atten= 3%, Lag= 1.6 min
Routed to Pond 302P : DB101

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.23 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.45 fps, Avg. Travel Time= 6.0 min

Peak Storage= 112 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.25' , Surface Width= 3.52'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 13.09 cfs

2.00' x 1.00' deep channel, n= 0.035 High grass
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 160.0' Slope= 0.0075 '/'
Inlet Invert= 308.30', Outlet Invert= 307.10'

‡

Summary for Reach 401R: RD22.1

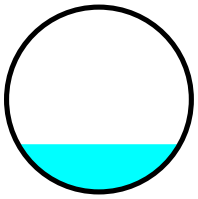
[52] Hint: Inlet/Outlet conditions not evaluated
[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.028 ac,100.00% Impervious, Inflow Depth > 4.05" for 10-Year event
Inflow = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.11 cfs @ 12.09 hrs, Volume= 0.009 af, Atten= 1%, Lag= 0.4 min
Routed to Pond 404P : DMH5

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.87 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 0.97 fps, Avg. Travel Time= 1.8 min

Peak Storage= 4 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.13' , Surface Width= 0.44'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 0.79 cfs

6.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 105.0' Slope= 0.0200 '/'
Inlet Invert= 425.00', Outlet Invert= 422.90'



Summary for Reach 402R: RD21.1

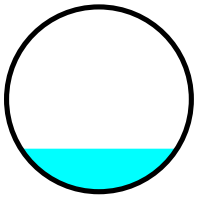
[52] Hint: Inlet/Outlet conditions not evaluated
[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.028 ac,100.00% Impervious, Inflow Depth > 4.05" for 10-Year event
Inflow = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.11 cfs @ 12.09 hrs, Volume= 0.009 af, Atten= 1%, Lag= 0.5 min
Routed to Pond 408P : DMH6

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.32 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.12 fps, Avg. Travel Time= 1.8 min

Peak Storage= 4 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.12' , Surface Width= 0.42'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 0.97 cfs

6.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 123.0' Slope= 0.0301 '/'
Inlet Invert= 427.50', Outlet Invert= 423.80'



Summary for Reach 403R: SS-1

Inflow Area = 6.901 ac, 10.90% Impervious, Inflow Depth > 1.02" for 10-Year event
Inflow = 3.49 cfs @ 12.10 hrs, Volume= 0.588 af
Outflow = 3.46 cfs @ 12.11 hrs, Volume= 0.587 af, Atten= 1%, Lag= 0.8 min
Routed to Pond 409P : IB401

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.87 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 0.68 fps, Avg. Travel Time= 3.0 min

Peak Storage= 222 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.36' , Surface Width= 6.18'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 95.96 cfs

4.00' x 2.00' deep channel, n= 0.035 High grass
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 120.0' Slope= 0.0100 '/'
Inlet Invert= 419.70', Outlet Invert= 418.50'

‡

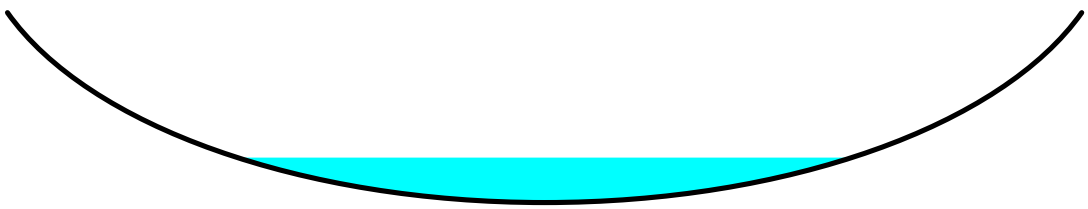
Summary for Reach 404R: TT-3

Inflow Area = 8.352 ac, 9.78% Impervious, Inflow Depth > 0.73" for 10-Year event
Inflow = 1.31 cfs @ 13.10 hrs, Volume= 0.511 af
Outflow = 1.31 cfs @ 13.13 hrs, Volume= 0.510 af, Atten= 0%, Lag= 2.0 min
Routed to Reach 408R : EXIST. CHANNEL

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.86 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 2.06 fps, Avg. Travel Time= 3.8 min

Peak Storage= 213 cf @ 13.13 hrs
Average Depth at Peak Storage= 0.24' , Surface Width= 2.91'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 29.00 cfs

6.00' x 1.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 465.0' Slope= 0.1118 '/'
Inlet Invert= 394.00', Outlet Invert= 342.00'



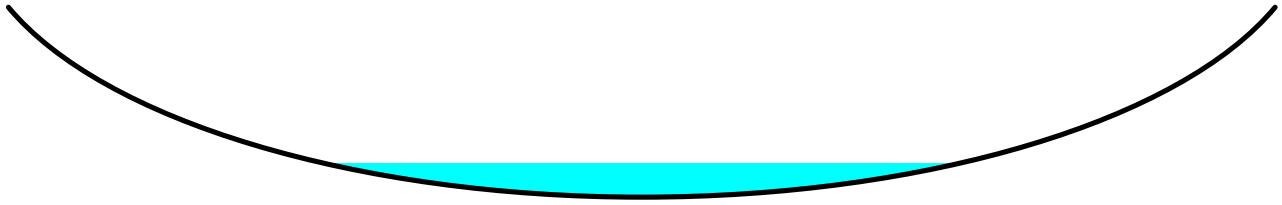
Summary for Reach 406R: TT-4

Inflow Area = 1.986 ac, 44.25% Impervious, Inflow Depth > 1.27" for 10-Year event
Inflow = 0.57 cfs @ 12.80 hrs, Volume= 0.211 af
Outflow = 0.57 cfs @ 12.83 hrs, Volume= 0.210 af, Atten= 0%, Lag= 1.4 min
Routed to Reach 408R : EXIST. CHANNEL

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.40 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.98 fps, Avg. Travel Time= 2.7 min

Peak Storage= 65 cf @ 12.83 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 3.38'
Bank-Full Depth= 1.00' Flow Area= 5.3 sf, Capacity= 23.05 cfs

8.00' x 1.00' deep Parabolic Channel, n= 0.070 Sluggish weedy reaches w/pools
Length= 160.0' Slope= 0.0750 '/'
Inlet Invert= 354.00', Outlet Invert= 342.00'



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Summary for Reach 408R: EXIST. CHANNEL

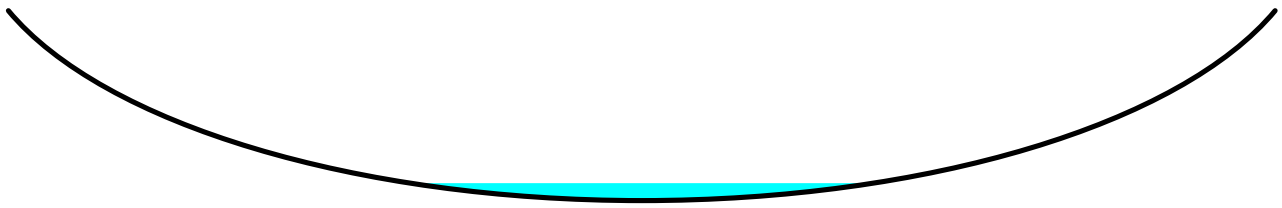
[62] Hint: Exceeded Reach 404R OUTLET depth by 0.01' @ 12.16 hrs
[62] Hint: Exceeded Reach 406R OUTLET depth by 0.01' @ 23.98 hrs

Inflow Area = 10.338 ac, 16.41% Impervious, Inflow Depth > 0.84" for 10-Year event
Inflow = 1.86 cfs @ 13.08 hrs, Volume= 0.720 af
Outflow = 1.86 cfs @ 13.12 hrs, Volume= 0.718 af, Atten= 0%, Lag= 2.7 min
Routed to Pond E4P : 30" RCP

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.53 fps, Min. Travel Time= 3.6 min
Avg. Velocity = 1.80 fps, Avg. Travel Time= 5.1 min

Peak Storage= 402 cf @ 13.12 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 6.04'
Bank-Full Depth= 2.00' Flow Area= 26.7 sf, Capacity= 327.19 cfs

20.00' x 2.00' deep Parabolic Channel, n= 0.040 Mountain streams
Length= 546.0' Slope= 0.0769 '/'
Inlet Invert= 342.00', Outlet Invert= 300.00'



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Summary for Pond 201P: HW201

Inflow Area = 0.272 ac, 25.89% Impervious, Inflow Depth > 1.46" for 10-Year event
Inflow = 0.45 cfs @ 12.10 hrs, Volume= 0.033 af
Outflow = 0.43 cfs @ 12.12 hrs, Volume= 0.033 af, Atten= 3%, Lag= 1.3 min
Primary = 0.43 cfs @ 12.12 hrs, Volume= 0.033 af
Routed to Pond 202P : FB201

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 399.32' @ 12.12 hrs Surf.Area= 213 sf Storage= 34 cf

Plug-Flow detention time= 1.4 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 1.1 min (859.3 - 858.2)

Volume	Invert	Avail.Storage	Storage Description
#1	399.00'	2,505 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
399.00	0	0	0
400.00	670	335	335
402.00	1,500	2,170	2,505

Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**15.0" Round Culvert** L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 399.00' / 398.28' S= 0.0080 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.43 cfs @ 12.12 hrs HW=399.32' TW=395.15' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.43 cfs @ 2.64 fps)

Summary for Pond 202P: FB201

Inflow Area = 6.454 ac, 4.59% Impervious, Inflow Depth > 0.78" for 10-Year event
Inflow = 2.69 cfs @ 12.45 hrs, Volume= 0.418 af
Outflow = 2.69 cfs @ 12.45 hrs, Volume= 0.399 af, Atten= 0%, Lag= 0.0 min
Primary = 2.69 cfs @ 12.45 hrs, Volume= 0.399 af
Routed to Pond 203P : IB201

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 396.06' @ 12.45 hrs Surf.Area= 624 sf Storage= 877 cf

Plug-Flow detention time= 32.3 min calculated for 0.398 af (95% of inflow)
Center-of-Mass det. time= 9.2 min (918.1 - 908.9)

Volume	Invert	Avail.Storage	Storage Description
#1	394.00'	1,640 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
394.00	240	0	0
396.00	600	840	840
397.00	1,000	800	1,640

Device	Routing	Invert	Outlet Devices
#1	Primary	396.00'	**55.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=2.69 cfs @ 12.45 hrs HW=396.06' TW=394.87' (Dynamic Tailwater)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 2.69 cfs @ 0.81 fps)

Summary for Pond 203P: IB201

Inflow Area = 7.845 ac, 4.13% Impervious, Inflow Depth > 0.75" for 10-Year event
Inflow = 3.22 cfs @ 12.44 hrs, Volume= 0.487 af
Outflow = 1.52 cfs @ 12.92 hrs, Volume= 0.409 af, Atten= 53%, Lag= 28.7 min
Discarded = 0.03 cfs @ 12.92 hrs, Volume= 0.028 af
Primary = 1.49 cfs @ 12.92 hrs, Volume= 0.382 af
Routed to Reach 202R : CS-1
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af
Routed to Reach 101R : TT-1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 395.55' @ 12.92 hrs Surf.Area= 3,810 sf Storage= 5,158 cf

Plug-Flow detention time= 118.9 min calculated for 0.409 af (84% of inflow)
Center-of-Mass det. time= 50.0 min (963.3 - 913.4)

Volume	Invert	Avail.Storage	Storage Description
#1	394.00'	18,853 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
394.00	2,840	0	0
396.00	4,090	6,930	6,930
396.10	4,860	448	7,378
398.00	7,220	11,476	18,853

Device	Routing	Invert	Outlet Devices
#1	Discarded	394.00'	**0.300 in/hr Exfiltration over Surface area**
#2	Secondary	396.50'	**4.0' long + 2.0 '/' SideZ x 54.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Primary	394.90'	**12.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 394.90' / 388.90' S= 0.2000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.03 cfs @ 12.92 hrs HW=395.55' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=1.49 cfs @ 12.92 hrs HW=395.55' TW=390.73' (Dynamic Tailwater)
└**3=Culvert** (Inlet Controls 1.49 cfs @ 2.75 fps)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=394.00' TW=396.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 204P: CB201

Inflow Area = 0.305 ac, 81.28% Impervious, Inflow Depth > 3.30" for 10-Year event
Inflow = 1.14 cfs @ 12.09 hrs, Volume= 0.084 af
Outflow = 1.14 cfs @ 12.09 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min
Primary = 1.14 cfs @ 12.09 hrs, Volume= 0.084 af
Routed to Pond 206P : CB202

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 391.81' @ 12.11 hrs
Flood Elev= 394.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	390.90'	**12.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 390.90' / 390.60' S= 0.0150 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.79 cfs @ 12.09 hrs HW=391.75' TW=391.68' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.79 cfs @ 1.49 fps)

Summary for Pond 205P: FES201

Inflow Area = 0.810 ac, 17.55% Impervious, Inflow Depth > 1.20" for 10-Year event
Inflow = 1.01 cfs @ 12.11 hrs, Volume= 0.081 af
Outflow = 0.99 cfs @ 12.13 hrs, Volume= 0.081 af, Atten= 2%, Lag= 1.0 min
Primary = 0.99 cfs @ 12.13 hrs, Volume= 0.081 af
Routed to Pond 206P : CB202

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 394.65' @ 12.13 hrs Surf.Area= 195 sf Storage= 54 cf

Plug-Flow detention time= 0.8 min calculated for 0.081 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (871.4 - 870.7)

Volume	Invert	Avail.Storage	Storage Description
#1	394.10'	636 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
394.10	0	0	0
396.00	670	636	636

Device	Routing	Invert	Outlet Devices
#1	Primary	394.10'	**12.0" Round Culvert** L= 70.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 394.10' / 390.60' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.99 cfs @ 12.13 hrs HW=394.65' TW=391.61' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.99 cfs @ 2.23 fps)

Summary for Pond 206P: CB202

Inflow Area = 1.407 ac, 45.20% Impervious, Inflow Depth > 2.12" for 10-Year event
Inflow = 3.16 cfs @ 12.10 hrs, Volume= 0.248 af
Outflow = 3.16 cfs @ 12.10 hrs, Volume= 0.248 af, Atten= 0%, Lag= 0.0 min
Primary = 3.16 cfs @ 12.10 hrs, Volume= 0.248 af
Routed to Pond 207P : CB203

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 391.70' @ 12.10 hrs
Flood Elev= 394.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	390.50'	**12.0" Round Culvert**

L= 95.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 390.50' / 385.75' S= 0.0500 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.15 cfs @ 12.10 hrs HW=391.69' TW=386.74' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.15 cfs @ 4.01 fps)

Summary for Pond 207P: CB203

Inflow Area = 1.442 ac, 45.73% Impervious, Inflow Depth > 2.13" for 10-Year event
Inflow = 3.27 cfs @ 12.10 hrs, Volume= 0.256 af
Outflow = 3.27 cfs @ 12.10 hrs, Volume= 0.256 af, Atten= 0%, Lag= 0.0 min
Primary = 3.27 cfs @ 12.10 hrs, Volume= 0.256 af
Routed to Pond 208P : CB204

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 386.75' @ 12.10 hrs
Flood Elev= 389.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	385.50'	**12.0" Round Culvert** L= 27.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 385.50' / 383.61' S= 0.0700 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.26 cfs @ 12.10 hrs HW=386.74' TW=384.39' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.26 cfs @ 4.15 fps)

Summary for Pond 208P: CB204

Inflow Area = 1.574 ac, 48.59% Impervious, Inflow Depth > 2.23" for 10-Year event
Inflow = 3.76 cfs @ 12.10 hrs, Volume= 0.293 af
Outflow = 3.76 cfs @ 12.10 hrs, Volume= 0.293 af, Atten= 0%, Lag= 0.0 min
Primary = 3.76 cfs @ 12.10 hrs, Volume= 0.293 af
Routed to Pond 209P : CB205

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 384.39' @ 12.10 hrs
Flood Elev= 387.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	383.36'	**15.0" Round Culvert** L= 135.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 383.36' / 370.40' S= 0.0960 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.74 cfs @ 12.10 hrs HW=384.39' TW=371.07' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.74 cfs @ 3.46 fps)

Summary for Pond 209P: CB205

Inflow Area = 1.688 ac, 47.31% Impervious, Inflow Depth > 2.19" for 10-Year event
Inflow = 3.98 cfs @ 12.10 hrs, Volume= 0.309 af
Outflow = 3.98 cfs @ 12.10 hrs, Volume= 0.309 af, Atten= 0%, Lag= 0.0 min
Primary = 3.98 cfs @ 12.10 hrs, Volume= 0.309 af
Routed to Pond 213P : DMH1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 371.08' @ 12.10 hrs
Flood Elev= 374.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	370.00'	**15.0" Round Culvert** L= 220.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 370.00' / 348.00' S= 0.1000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.96 cfs @ 12.10 hrs HW=371.07' TW=349.58' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.96 cfs @ 3.53 fps)

Summary for Pond 210P: FES202

Inflow Area = 1.138 ac, 28.51% Impervious, Inflow Depth > 1.46" for 10-Year event
Inflow = 1.80 cfs @ 12.11 hrs, Volume= 0.139 af
Outflow = 1.79 cfs @ 12.12 hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.5 min
Primary = 1.79 cfs @ 12.12 hrs, Volume= 0.139 af
Routed to Reach 206R : TT-2

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 368.20' @ 12.12 hrs Surf.Area= 112 sf Storage= 36 cf

Plug-Flow detention time= 0.3 min calculated for 0.139 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (859.2 - 858.9)

Volume	Invert	Avail.Storage	Storage Description
#1	367.50'	1,308 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
367.50	0	0	0
368.00	70	18	18
370.00	480	550	568
371.00	1,000	740	1,308

Device	Routing	Invert	Outlet Devices
#1	Primary	367.50'	**15.0" Round Culvert** L= 60.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 367.50' / 366.60' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.79 cfs @ 12.12 hrs HW=368.20' TW=366.95' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.79 cfs @ 2.52 fps)

Summary for Pond 211P: FES204

[62] Hint: Exceeded Reach 206R OUTLET depth by 0.93' @ 12.14 hrs

Inflow Area = 2.443 ac, 34.12% Impervious, Inflow Depth > 1.65" for 10-Year event
Inflow = 4.38 cfs @ 12.12 hrs, Volume= 0.336 af
Outflow = 4.22 cfs @ 12.14 hrs, Volume= 0.336 af, Atten= 4%, Lag= 1.5 min
Primary = 4.22 cfs @ 12.14 hrs, Volume= 0.336 af
Routed to Pond 212P : CB208

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 352.28' @ 12.14 hrs Surf.Area= 382 sf Storage= 194 cf

Plug-Flow detention time= 0.5 min calculated for 0.336 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (852.0 - 851.5)

Volume	Invert	Avail.Storage	Storage Description
#1	351.00'	1,770 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
351.00	0	0	0
352.00	220	110	110
353.00	800	510	620
354.00	1,500	1,150	1,770

Device	Routing	Invert	Outlet Devices
#1	Primary	351.00'	**15.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 351.00' / 349.80' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.21 cfs @ 12.14 hrs HW=352.28' TW=351.05' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 4.21 cfs @ 3.43 fps)

Summary for Pond 212P: CB208

Inflow Area = 2.699 ac, 39.02% Impervious, Inflow Depth > 1.83" for 10-Year event
Inflow = 5.06 cfs @ 12.13 hrs, Volume= 0.411 af
Outflow = 5.06 cfs @ 12.13 hrs, Volume= 0.411 af, Atten= 0%, Lag= 0.0 min
Primary = 5.06 cfs @ 12.13 hrs, Volume= 0.411 af
Routed to Pond 213P : DMH1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Peak Elev= 351.06' @ 12.13 hrs
Flood Elev= 353.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	349.70'	**15.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 349.70' / 348.00' S= 0.0170 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.05 cfs @ 12.13 hrs HW=351.06' TW=349.56' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 5.05 cfs @ 4.12 fps)

Summary for Pond 213P: DMH1

Inflow Area = 4.388 ac, 42.21% Impervious, Inflow Depth > 1.97" for 10-Year event
Inflow = 8.96 cfs @ 12.11 hrs, Volume= 0.720 af
Outflow = 8.96 cfs @ 12.11 hrs, Volume= 0.720 af, Atten= 0%, Lag= 0.0 min
Primary = 8.96 cfs @ 12.11 hrs, Volume= 0.720 af
Routed to Pond 215P : DMH2

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 349.61' @ 12.11 hrs
Flood Elev= 358.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	347.75'	**18.0" Round Culvert** L= 111.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 347.75' / 344.20' S= 0.0320 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.91 cfs @ 12.11 hrs HW=349.60' TW=346.02' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 8.91 cfs @ 5.04 fps)

Summary for Pond 214P: HW205

Inflow Area = 0.426 ac, 26.60% Impervious, Inflow Depth > 1.46" for 10-Year event
Inflow = 0.70 cfs @ 12.10 hrs, Volume= 0.052 af
Outflow = 0.70 cfs @ 12.10 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.10 hrs, Volume= 0.052 af
Routed to Pond 215P : DMH2

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 346.06' @ 12.13 hrs
Flood Elev= 348.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	345.10'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 345.10' / 344.50' S= 0.0300 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=345.93' TW=346.01' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 215P: DMH2

[80] Warning: Exceeded Pond 214P by 0.14' @ 12.08 hrs (1.30 cfs 0.005 af)

Inflow Area = 4.813 ac, 40.83% Impervious, Inflow Depth > 1.92" for 10-Year event
Inflow = 9.65 cfs @ 12.11 hrs, Volume= 0.772 af
Outflow = 9.65 cfs @ 12.11 hrs, Volume= 0.772 af, Atten= 0%, Lag= 0.0 min
Primary = 9.65 cfs @ 12.11 hrs, Volume= 0.772 af
Routed to Pond 216P : FB202

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 346.04' @ 12.11 hrs
Flood Elev= 349.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	344.00'	**18.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 344.00' / 332.50' S= 0.1150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=9.60 cfs @ 12.11 hrs HW=346.02' TW=332.77' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 9.60 cfs @ 5.43 fps)

Summary for Pond 216P: FB202

Inflow Area = 4.813 ac, 40.83% Impervious, Inflow Depth > 1.92" for 10-Year event
Inflow = 9.65 cfs @ 12.11 hrs, Volume= 0.772 af
Outflow = 9.51 cfs @ 12.12 hrs, Volume= 0.771 af, Atten= 1%, Lag= 1.1 min
Primary = 9.51 cfs @ 12.12 hrs, Volume= 0.771 af
Routed to Pond 219P : DB201

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Starting Elev= 332.30' Surf.Area= 1,536 sf Storage= 2,170 cf
Peak Elev= 332.78' @ 12.12 hrs Surf.Area= 1,865 sf Storage= 2,987 cf (817 cf above start)

Plug-Flow detention time= 53.4 min calculated for 0.720 af (93% of inflow)
Center-of-Mass det. time= 2.2 min (832.9 - 830.7)

Volume	Invert	Avail.Storage	Storage Description
#1	330.00'	5,770 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
330.00	410	0	0
332.00	1,330	1,740	1,740
334.00	2,700	4,030	5,770

Device	Routing	Invert	Outlet Devices
#1	Primary	332.30'	**10.0' long + 2.0 '/' SideZ x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=9.48 cfs @ 12.12 hrs HW=332.78' TW=324.16' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 9.48 cfs @ 1.80 fps)

Summary for Pond 217P: CB209

Inflow Area = 0.733 ac, 12.40% Impervious, Inflow Depth > 1.14" for 10-Year event
Inflow = 0.89 cfs @ 12.10 hrs, Volume= 0.070 af
Outflow = 0.89 cfs @ 12.10 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.10 hrs, Volume= 0.070 af
Routed to Pond 218P : FB203

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 326.48' @ 12.10 hrs
Flood Elev= 329.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	326.00'	**12.0" Round Culvert** L= 63.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 326.00' / 324.30' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.89 cfs @ 12.10 hrs HW=326.48' TW=323.77' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.89 cfs @ 2.36 fps)

Summary for Pond 218P: FB203

[93] Warning: Storage range exceeded by 1.11'
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=164)

Inflow Area = 0.733 ac, 12.40% Impervious, Inflow Depth > 1.14" for 10-Year event
Inflow = 0.89 cfs @ 12.10 hrs, Volume= 0.070 af
Outflow = 0.66 cfs @ 12.40 hrs, Volume= 0.054 af, Atten= 26%, Lag= 18.0 min
Primary = 0.66 cfs @ 12.40 hrs, Volume= 0.054 af
Routed to Pond 219P : DB201

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 326.11' @ 13.48 hrs Surf.Area= 580 sf Storage= 1,050 cf

Plug-Flow detention time= 210.3 min calculated for 0.054 af (77% of inflow)
Center-of-Mass det. time= 119.2 min (992.3 - 873.1)

Volume	Invert	Avail.Storage	Storage Description
#1	322.00'	1,050 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
322.00	130	0	0
324.00	420	550	550
325.00	580	500	1,050

Device	Routing	Invert	Outlet Devices
#1	Primary	324.00'	**36.0' long + 3.0 '/' SideZ x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.00 cfs @ 12.40 hrs HW=325.46' TW=325.51' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 219P: DB201

[80] Warning: Exceeded Pond 218P by 1.12' @ 13.46 hrs (320.83 cfs 58.849 af)

Inflow Area = 15.486 ac, 17.02% Impervious, Inflow Depth > 1.09" for 10-Year event
Inflow = 11.50 cfs @ 12.13 hrs, Volume= 1.412 af
Outflow = 2.45 cfs @ 13.47 hrs, Volume= 1.194 af, Atten= 79%, Lag= 80.4 min
Primary = 2.45 cfs @ 13.47 hrs, Volume= 1.194 af
Routed to Reach 208R : TS-2
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af
Routed to Pond 301P : HW101

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 326.12' @ 13.47 hrs Surf.Area= 6,623 sf Storage= 19,579 cf

Plug-Flow detention time= 159.0 min calculated for 1.193 af (85% of inflow)
Center-of-Mass det. time= 90.9 min (972.0 - 881.1)

Volume	Invert	Avail.Storage	Storage Description
#1	322.00'	43,245 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
322.00	3,030	0	0
324.00	4,630	7,660	7,660
326.00	6,490	11,120	18,780
328.00	8,670	15,160	33,940
329.00	9,940	9,305	43,245

Device	Routing	Invert	Outlet Devices
#1	Primary	321.70'	**15.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 321.70' / 320.50' S= 0.0300 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	322.00'	**3.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.40'	**3.0" W x 40.8" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	327.90'	**4.0" x 4.7" Horiz. Orifice/Grate X 6.00 columns** X 6 rows C= 0.600 Limited to weir flow at low heads
#5	Secondary	328.00'	**4.0' long + 2.0 '/' SideZ x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=2.45 cfs @ 13.47 hrs HW=326.12' TW=320.97' (Dynamic Tailwater)
- **1=Culvert** (Passes 2.45 cfs of 11.51 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.64 cfs @ 9.60 fps)
  - **3=Orifice/Grate** (Orifice Controls 1.81 cfs @ 4.21 fps)
- **4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=322.00' TW=310.30' (Dynamic Tailwater)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 301P: HW101

Inflow Area = 0.202 ac, 26.42% Impervious, Inflow Depth > 1.60" for 10-Year event
Inflow = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af
Outflow = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min
Primary = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af
Routed to Reach 301R : TS-1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 310.58' @ 12.09 hrs
Flood Elev= 312.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.30'	**15.0" Round Culvert** L= 38.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.30' / 308.40' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.37 cfs @ 12.09 hrs HW=310.58' TW=308.53' (Dynamic Tailwater)
- **1=Culvert** (Inlet Controls 0.37 cfs @ 1.80 fps)

Summary for Pond 302P: DB101

Inflow Area = 1.605 ac, 9.46% Impervious, Inflow Depth > 0.98" for 10-Year event
Inflow = 1.42 cfs @ 12.14 hrs, Volume= 0.132 af
Outflow = 0.51 cfs @ 12.55 hrs, Volume= 0.127 af, Atten= 64%, Lag= 24.4 min
Primary = 0.51 cfs @ 12.55 hrs, Volume= 0.127 af
Routed to Pond 303P : DMH7
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af
Routed to Pond E4P : 30" RCP

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 305.41' @ 12.55 hrs Surf.Area= 1,356 sf Storage= 1,466 cf
Flood Elev= 307.20' Surf.Area= 3,324 sf Storage= 5,306 cf

Plug-Flow detention time= 74.9 min calculated for 0.127 af (97% of inflow)
Center-of-Mass det. time= 57.2 min (940.4 - 883.3)

Volume	Invert	Avail.Storage	Storage Description
#1	304.00'	8,420 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
304.00	720	0	0
306.00	1,620	2,340	2,340
308.00	4,460	6,080	8,420

Device	Routing	Invert	Outlet Devices
#1	Primary	303.90'	**12.0" Round Culvert** L= 15.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 303.90' / 303.80' S= 0.0067 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	304.00'	**2.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	304.60'	**2.0" W x 20.4" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	306.30'	**4.0" x 4.7" Horiz. Orifice/Grate X 5.00 columns** X 6 rows C= 0.600 Limited to weir flow at low heads
#5	Secondary	307.00'	**2.0' long + 2.0 '/' SideZ x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.51 cfs @ 12.55 hrs HW=305.41' TW=303.70' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.51 cfs of 3.35 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.12 cfs @ 5.55 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.39 cfs @ 2.89 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=304.00' TW=294.70' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 303P: DMH7

[57] Hint: Peaked at 303.72' (Flood elevation advised)

Inflow Area = 2.255 ac, 13.86% Impervious, Inflow Depth > 0.99" for 10-Year event
Inflow = 0.81 cfs @ 12.37 hrs, Volume= 0.186 af
Outflow = 0.81 cfs @ 12.37 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min
Primary = 0.81 cfs @ 12.37 hrs, Volume= 0.186 af
Routed to Link OP1 : 70 ACRE SWAMP/ SCAB MILL BROOK

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 303.72' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	303.30'	**15.0" Round Culvert** L= 230.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 303.30' / 301.00' S= 0.0100 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.81 cfs @ 12.37 hrs HW=303.72' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.81 cfs @ 2.22 fps)

Summary for Pond 401P: HW401

Inflow Area = 5.183 ac, 1.06% Impervious, Inflow Depth > 0.70" for 10-Year event
Inflow = 1.87 cfs @ 12.50 hrs, Volume= 0.301 af
Outflow = 1.87 cfs @ 12.50 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.0 min
Primary = 1.87 cfs @ 12.50 hrs, Volume= 0.301 af
Routed to Pond 402P : CB401

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 425.67' @ 12.50 hrs
Flood Elev= 428.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	425.00'	**15.0" Round Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 425.00' / 422.55' S= 0.0350 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.87 cfs @ 12.50 hrs HW=425.67' TW=423.26' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.87 cfs @ 2.79 fps)

Summary for Pond 402P: CB401

Inflow Area = 5.489 ac, 5.52% Impervious, Inflow Depth > 0.84" for 10-Year event
Inflow = 2.14 cfs @ 12.45 hrs, Volume= 0.385 af
Outflow = 2.14 cfs @ 12.45 hrs, Volume= 0.385 af, Atten= 0%, Lag= 0.0 min
Primary = 2.14 cfs @ 12.45 hrs, Volume= 0.385 af
Routed to Pond 403P : CB402

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 423.27' @ 12.45 hrs
Flood Elev= 425.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	422.45'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 422.45' / 422.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.15 cfs @ 12.45 hrs HW=423.27' TW=422.87' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.15 cfs @ 3.59 fps)

Summary for Pond 403P: CB402

Inflow Area = 5.776 ac, 9.46% Impervious, Inflow Depth > 0.97" for 10-Year event
Inflow = 2.44 cfs @ 12.42 hrs, Volume= 0.466 af
Outflow = 2.44 cfs @ 12.42 hrs, Volume= 0.466 af, Atten= 0%, Lag= 0.0 min
Primary = 2.44 cfs @ 12.42 hrs, Volume= 0.466 af
Routed to Pond 404P : DMH5

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 422.87' @ 12.43 hrs
Flood Elev= 425.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**18.0" Round Culvert** L= 62.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 422.00' / 421.70' S= 0.0048 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.44 cfs @ 12.42 hrs HW=422.87' TW=422.40' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.44 cfs @ 3.29 fps)

Summary for Pond 404P: DMH5

Inflow Area = 5.803 ac, 9.89% Impervious, Inflow Depth > 0.98" for 10-Year event
Inflow = 2.52 cfs @ 12.09 hrs, Volume= 0.476 af
Outflow = 2.52 cfs @ 12.09 hrs, Volume= 0.476 af, Atten= 0%, Lag= 0.0 min
Primary = 2.52 cfs @ 12.09 hrs, Volume= 0.476 af
Routed to Pond 408P : DMH6

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 422.42' @ 12.10 hrs
Flood Elev= 428.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	421.60'	**18.0" Round Culvert** L= 250.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 421.60' / 420.10' S= 0.0060 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.49 cfs @ 12.09 hrs HW=422.42' TW=420.95' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 2.49 cfs @ 3.67 fps)

Summary for Pond 405P: FES401

Inflow Area = 0.926 ac, 2.98% Impervious, Inflow Depth > 0.80" for 10-Year event
Inflow = 0.53 cfs @ 12.22 hrs, Volume= 0.062 af
Outflow = 0.53 cfs @ 12.22 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min
Primary = 0.53 cfs @ 12.22 hrs, Volume= 0.062 af
Routed to Pond 406P : CB403

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 432.39' @ 12.22 hrs
Flood Elev= 436.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	432.00'	**12.0" Round Culvert** L= 75.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 432.00' / 428.25' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.53 cfs @ 12.22 hrs HW=432.39' TW=428.46' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.53 cfs @ 1.88 fps)

Summary for Pond 406P: CB403

Inflow Area = 1.070 ac, 14.03% Impervious, Inflow Depth > 1.15" for 10-Year event
Inflow = 0.89 cfs @ 12.14 hrs, Volume= 0.103 af
Outflow = 0.89 cfs @ 12.14 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.14 hrs, Volume= 0.103 af
Routed to Pond 408P : DMH6

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 428.48' @ 12.14 hrs
Flood Elev= 434.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	428.00'	**12.0" Round Culvert** L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 428.00' / 420.80' S= 0.0800 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.89 cfs @ 12.14 hrs HW=428.48' TW=420.93' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.89 cfs @ 2.36 fps)

Summary for Pond 408P: DMH6

Inflow Area = 6.901 ac, 10.90% Impervious, Inflow Depth > 1.02" for 10-Year event
Inflow = 3.49 cfs @ 12.10 hrs, Volume= 0.588 af
Outflow = 3.49 cfs @ 12.10 hrs, Volume= 0.588 af, Atten= 0%, Lag= 0.0 min
Primary = 3.49 cfs @ 12.10 hrs, Volume= 0.588 af
Routed to Reach 403R : SS-1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 420.96' @ 12.10 hrs
Flood Elev= 431.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	420.00'	**18.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.00' / 419.70' S= 0.0120 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.49 cfs @ 12.10 hrs HW=420.95' TW=420.06' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 3.49 cfs @ 4.19 fps)

Summary for Pond 409P: IB401

Inflow Area = 8.352 ac, 9.78% Impervious, Inflow Depth > 0.99" for 10-Year event
Inflow = 4.50 cfs @ 12.12 hrs, Volume= 0.691 af
Outflow = 1.35 cfs @ 13.10 hrs, Volume= 0.555 af, Atten= 70%, Lag= 58.5 min
Discarded = 0.04 cfs @ 13.10 hrs, Volume= 0.044 af
Primary = 1.31 cfs @ 13.10 hrs, Volume= 0.511 af
Routed to Reach 404R : TT-3

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 400.59' @ 13.10 hrs Surf.Area= 5,195 sf Storage= 10,844 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 90.8 min (961.6 - 870.9)

Volume	Invert	Avail.Storage	Storage Description
#1	398.00'	25,873 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
398.00	3,240	0	0
400.00	4,700	7,940	7,940
402.00	6,385	11,085	19,025
403.00	7,310	6,848	25,873

Device	Routing	Invert	Outlet Devices
#1	Discarded	398.00'	**0.300 in/hr Exfiltration over Surface area**
#2	Primary	398.70'	**15.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 398.70' / 394.20' S= 0.1500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	399.20'	**3.0" W x 32.4" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	401.90'	**4.0" x 4.7" Horiz. Orifice/Grate X 5.00 columns** X 6 rows C= 0.600
#5	Primary	402.00'	**4.0' long + 3.0 '/' SideZ x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Discarded OutFlow Max=0.04 cfs @ 13.10 hrs HW=400.59' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=1.31 cfs @ 13.10 hrs HW=400.59' TW=394.24' (Dynamic Tailwater)
├─**2=Culvert** (Passes 1.31 cfs of 6.64 cfs potential flow)
│ ├─**3=Orifice/Grate** (Orifice Controls 1.31 cfs @ 3.78 fps)
│ └─**4=Orifice/Grate** (Controls 0.00 cfs)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 410P: HW404

Inflow Area = 0.206 ac, 32.04% Impervious, Inflow Depth > 1.74" for 10-Year event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 0.030 af
Outflow = 0.41 cfs @ 12.09 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
Primary = 0.41 cfs @ 12.09 hrs, Volume= 0.030 af
Routed to Pond 412P : CB405

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 368.30' @ 12.09 hrs
Flood Elev= 371.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	368.00'	**15.0" Round Culvert** L= 225.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 362.15' S= 0.0260 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.41 cfs @ 12.09 hrs HW=368.30' TW=362.69' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.41 cfs @ 1.85 fps)

Summary for Pond 411P: CB404

Inflow Area = 0.261 ac, 84.37% Impervious, Inflow Depth > 3.51" for 10-Year event
Inflow = 1.02 cfs @ 12.08 hrs, Volume= 0.076 af
Outflow = 1.02 cfs @ 12.08 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.08 hrs, Volume= 0.076 af
Routed to Pond 412P : CB405

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 363.32' @ 12.08 hrs
Flood Elev= 366.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	362.80'	**12.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 362.80' / 362.40' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.02 cfs @ 12.08 hrs HW=363.32' TW=362.69' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.02 cfs @ 2.46 fps)

Summary for Pond 412P: CB405

Inflow Area = 0.742 ac, 68.46% Impervious, Inflow Depth > 2.98" for 10-Year event
Inflow = 2.48 cfs @ 12.09 hrs, Volume= 0.184 af
Outflow = 2.48 cfs @ 12.09 hrs, Volume= 0.184 af, Atten= 0%, Lag= 0.0 min
Primary = 2.48 cfs @ 12.09 hrs, Volume= 0.184 af
Routed to Pond 413P : DMH3

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 362.69' @ 12.09 hrs
Flood Elev= 366.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	361.90'	**15.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 361.90' / 360.60' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.46 cfs @ 12.09 hrs HW=362.69' TW=361.29' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 2.46 cfs @ 3.02 fps)

Summary for Pond 413P: DMH3

Inflow Area = 0.742 ac, 68.46% Impervious, Inflow Depth > 2.98" for 10-Year event
Inflow = 2.48 cfs @ 12.09 hrs, Volume= 0.184 af
Outflow = 2.48 cfs @ 12.09 hrs, Volume= 0.184 af, Atten= 0%, Lag= 0.0 min
Primary = 2.48 cfs @ 12.09 hrs, Volume= 0.184 af
Routed to Pond 416P : CB408

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 361.29' @ 12.09 hrs
Flood Elev= 365.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	360.50'	**15.0" Round Culvert** L= 102.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 360.50' / 358.75' S= 0.0172 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.46 cfs @ 12.09 hrs HW=361.29' TW=359.58' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 2.46 cfs @ 3.02 fps)

Summary for Pond 414P: CB406

Inflow Area = 0.433 ac, 13.61% Impervious, Inflow Depth > 1.20" for 10-Year event
Inflow = 0.51 cfs @ 12.14 hrs, Volume= 0.043 af
Outflow = 0.51 cfs @ 12.14 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min
Primary = 0.51 cfs @ 12.14 hrs, Volume= 0.043 af
Routed to Pond 415P : CB407

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 360.44' @ 12.13 hrs
Flood Elev= 363.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	360.01'	**12.0" Round Culvert** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 360.01' / 359.50' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.52 cfs @ 12.14 hrs HW=360.44' TW=359.96' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.52 cfs @ 2.35 fps)

Summary for Pond 415P: CB407

Inflow Area = 0.637 ac, 29.35% Impervious, Inflow Depth > 1.75" for 10-Year event
Inflow = 1.15 cfs @ 12.11 hrs, Volume= 0.093 af
Outflow = 1.15 cfs @ 12.11 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min
Primary = 1.15 cfs @ 12.11 hrs, Volume= 0.093 af
Routed to Pond 416P : CB408

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 359.99' @ 12.11 hrs
Flood Elev= 362.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	359.40'	**12.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 359.40' / 359.00' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.16 cfs @ 12.11 hrs HW=359.99' TW=359.57' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.16 cfs @ 3.49 fps)

Summary for Pond 416P: CB408

Inflow Area = 1.567 ac, 54.21% Impervious, Inflow Depth > 2.53" for 10-Year event
Inflow = 4.34 cfs @ 12.09 hrs, Volume= 0.331 af
Outflow = 4.34 cfs @ 12.09 hrs, Volume= 0.331 af, Atten= 0%, Lag= 0.0 min
Primary = 4.34 cfs @ 12.09 hrs, Volume= 0.331 af
Routed to Pond 417P : FB401

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 359.58' @ 12.09 hrs
Flood Elev= 362.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	358.50'	**18.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 358.50' / 358.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.30 cfs @ 12.09 hrs HW=359.58' TW=356.12' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 4.30 cfs @ 4.44 fps)

Summary for Pond 417P: FB401

Inflow Area = 1.567 ac, 54.21% Impervious, Inflow Depth > 2.53" for 10-Year event
Inflow = 4.34 cfs @ 12.09 hrs, Volume= 0.331 af
Outflow = 4.33 cfs @ 12.09 hrs, Volume= 0.306 af, Atten= 0%, Lag= 0.3 min
Primary = 4.33 cfs @ 12.09 hrs, Volume= 0.306 af
Routed to Pond 418P : IB402

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 356.12' @ 12.09 hrs Surf.Area= 733 sf Storage= 1,148 cf

Plug-Flow detention time= 60.5 min calculated for 0.306 af (93% of inflow)
Center-of-Mass det. time= 22.2 min (827.6 - 805.4)

Volume	Invert	Avail.Storage	Storage Description
#1	354.00'	1,865 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
354.00	350	0	0
356.00	710	1,060	1,060
357.00	900	805	1,865

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	**40.0' long + 3.0 '/' SideZ x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=4.31 cfs @ 12.09 hrs HW=356.12' TW=355.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 4.31 cfs @ 0.88 fps)

Summary for Pond 418P: IB402

Inflow Area = 1.986 ac, 44.25% Impervious, Inflow Depth > 2.07" for 10-Year event
Inflow = 4.77 cfs @ 12.10 hrs, Volume= 0.342 af
Outflow = 0.60 cfs @ 12.80 hrs, Volume= 0.247 af, Atten= 87%, Lag= 42.5 min
Discarded = 0.04 cfs @ 12.80 hrs, Volume= 0.036 af
Primary = 0.57 cfs @ 12.80 hrs, Volume= 0.211 af
Routed to Pond 419P : DMH4
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af
Routed to Reach 408R : EXIST. CHANNEL

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 355.69' @ 12.80 hrs Surf.Area= 5,223 sf Storage= 7,272 cf

Plug-Flow detention time= 215.8 min calculated for 0.246 af (72% of inflow)
Center-of-Mass det. time= 123.3 min (956.3 - 833.0)

Volume	Invert	Avail.Storage	Storage Description
#1	354.00'	19,873 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
354.00	3,370	0	0
356.00	5,560	8,930	8,930
356.50	7,070	3,158	12,088
357.50	8,500	7,785	19,873

Device	Routing	Invert	Outlet Devices
#1	Discarded	354.00'	**0.300 in/hr Exfiltration over Surface area**
#2	Primary	354.80'	**15.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 354.80' / 354.50' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	354.90'	**3.0" W x 16.8" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	356.30'	**4.0" x 4.7" Horiz. Orifice/Grate X 5.00 columns** X 6 rows C= 0.600 Limited to weir flow at low heads
#5	Secondary	356.50'	**4.0' long + 3.0 '/' SideZ x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Discarded OutFlow Max=0.04 cfs @ 12.80 hrs HW=355.69' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.57 cfs @ 12.80 hrs HW=355.69' TW=354.81' (Dynamic Tailwater)
└─**2=Culvert** (Passes 0.57 cfs of 2.31 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 0.57 cfs @ 2.86 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=354.00' TW=342.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 419P: DMH4

Inflow Area = 1.986 ac, 44.25% Impervious, Inflow Depth > 1.27" for 10-Year event
Inflow = 0.57 cfs @ 12.80 hrs, Volume= 0.211 af
Outflow = 0.57 cfs @ 12.80 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min
Primary = 0.57 cfs @ 12.80 hrs, Volume= 0.211 af
Routed to Reach 406R : TT-4

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 354.81' @ 12.80 hrs
Flood Elev= 359.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	354.40'	**15.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 354.40' / 354.20' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.57 cfs @ 12.80 hrs HW=354.81' TW=354.18' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.57 cfs @ 2.39 fps)

Summary for Pond E1P: DI2111

Inflow Area = 2.261 ac, 7.73% Impervious, Inflow Depth > 0.86" for 10-Year event
Inflow = 1.41 cfs @ 12.23 hrs, Volume= 0.161 af
Outflow = 1.41 cfs @ 12.23 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 12.23 hrs, Volume= 0.161 af
Routed to Link OP1 : 70 ACRE SWAMP/ SCAB MILL BROOK

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 312.57' @ 12.23 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	312.00'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 312.00' / 310.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.41 cfs @ 12.23 hrs HW=312.57' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.41 cfs @ 2.58 fps)

Summary for Pond E2P: DI2109

Inflow Area = 16.857 ac, 16.38% Impervious, Inflow Depth > 0.91" for 10-Year event
Inflow = 2.59 cfs @ 13.51 hrs, Volume= 1.279 af
Outflow = 2.59 cfs @ 13.51 hrs, Volume= 1.279 af, Atten= 0%, Lag= 0.0 min
Primary = 2.59 cfs @ 13.51 hrs, Volume= 1.279 af
Routed to Link OP1 : 70 ACRE SWAMP/ SCAB MILL BROOK

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 308.81' @ 13.51 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	308.00'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 308.00' / 306.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.59 cfs @ 13.51 hrs HW=308.81' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.59 cfs @ 3.07 fps)

Summary for Pond E3P: DI2102

Inflow Area = 0.650 ac, 24.73% Impervious, Inflow Depth > 1.08" for 10-Year event
Inflow = 0.68 cfs @ 12.13 hrs, Volume= 0.059 af
Outflow = 0.68 cfs @ 12.13 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.13 hrs, Volume= 0.059 af
Routed to Pond 303P : DMH7

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 304.40' @ 12.14 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	304.00'	**15.0" Round Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 304.00' / 303.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.67 cfs @ 12.13 hrs HW=304.40' TW=303.71' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.67 cfs @ 2.97 fps)

Summary for Pond E4P: 30" RCP

Inflow Area = 43.411 ac, 4.67% Impervious, Inflow Depth > 0.69" for 10-Year event
Inflow = 11.52 cfs @ 12.57 hrs, Volume= 2.501 af
Outflow = 11.52 cfs @ 12.57 hrs, Volume= 2.501 af, Atten= 0%, Lag= 0.0 min
Primary = 11.52 cfs @ 12.57 hrs, Volume= 2.501 af
Routed to Link OP1 : 70 ACRE SWAMP/ SCAB MILL BROOK

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Peak Elev= 295.94' @ 12.57 hrs
Flood Elev= 301.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.70'	**30.0" Round Culvert** L= 63.0' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 294.70' / 291.30' S= 0.0540 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 4.91 sf

Primary OutFlow Max=11.52 cfs @ 12.57 hrs HW=295.94' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 11.52 cfs @ 4.74 fps)

Summary for Link OP1: 70 ACRE SWAMP/ SCAB MILL BROOK

Inflow Area = 64.783 ac, 8.15% Impervious, Inflow Depth > 0.76" for 10-Year event
Inflow = 15.16 cfs @ 12.55 hrs, Volume= 4.127 af
Primary = 15.16 cfs @ 12.55 hrs, Volume= 4.127 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Section 3.1

Test Pit Data &
Site Specific Soil Report

FIELDSTONE
LAND CONSULTANTS, PLLC
Surveying ✦ Engineering
Land Planning ✦ Septic Designs
206 Elm Street, Milford, NH 03055 - Phone: 603-672-5456 - Fax: 603-413-5456
www.FieldstoneLandConsultants.com

TEST PIT DATA
TAMPOSI BROTHERS
ROUTE 13
BROOKLINE, NH

12/19/23
Test Pit #1
0-7”- 10YR 3/3 Dark brown loam, granular, friable.
7-24” - 10YR 5/6 Yellowish brown stony loamy sand, granular, friable
24-60” - 2.5Y 5/4 Light olive brown coarse-to-fine sandy loam, granular, friable. Stony.
ESHWT = 30” **Observed Water = 40”** **Ledge = 60”** **Roots = 45”**
Est. Perc Rate = 3 min/in @ 26”

12/19/23
Test Pit #2
0-8”- 10YR 3/3 Dark brown loam, granular, friable.
8-32” - 10YR 5/6 Yellowish brown stony loamy sand, granular, friable
32-72” - 2.5Y 5/4 Light olive brown coarse-to-fine sandy loam, granular, friable. Stony.
ESHWT = 32” **Observed Water = 32”** **Ledge = None** **Roots = 36”**
Est. Perc Rate = 3 min/in @ 24”

12/19/23
Test Pit #3
0-6”- 10YR 3/3 Dark brown loam, granular, friable.
6-30” - 10YR 5/6 Yellowish brown stony loamy sand, granular, friable
30-72” - 2.5Y 5/4 Light olive brown coarse-to-fine sandy loam, granular, friable. Stony.
ESHWT = 33” **Observed Water = 33”** **Ledge = None** **Roots = 36”**

12/19/23
Test Pit #4
0-8”- 10YR 3/3 Dark brown loam, granular, friable.
8-30” - 10YR 5/6 Yellowish brown stony loamy sand, granular, friable
30-60” - 2.5Y 5/4 Light olive brown coarse-to-fine sandy loam, granular, friable. Stony.
ESHWT = 24” **Observed Water = 24”** **Ledge = None** **Roots = 30”**

12/19/23
Test Pit #5
0-8”- 10YR 3/3 Dark brown loam, granular, friable.
8-28” - 10YR 5/6 Yellowish brown gravelly fine-to-medium sandy loam, granular, friable
28-75” - 2.5Y 5/6 5/6 Light olive brown stony fine-to-medium sandy loam, massive, friable
ESHWT = 32” **Observed Water = 32”** **Ledge = None** **Roots = 36”**

12/19/23
Test Pit #6
0-8”- 10YR 3/3 Dark brown loam, granular, friable.
8-28” - 10YR 5/6 Yellowish brown stony loamy sand, granular, friable
28-65” - 2.5Y 5/4 Light olive brown coarse-to-fine sandy loam, granular, friable. Stony.
ESHWT = 36” **Observed Water = 36”** **Ledge = None** **Roots = 40”**

12/19/23
Test Pit #7
0-8”- 10YR 3/3 Dark brown loam, granular, friable.
8-24” - 10YR 5/6 Yellowish brown stony loamy sand, granular, friable
24-72” - 2.5Y 5/4 Light olive brown coarse-to-fine sandy loam, granular, friable. Stony.
ESHWT = 36” **Observed Water = 36”** **Ledge = None** **Roots = 40”**

12/20/23
Test Pit #8
0-6”- 10YR 3/3 Dark brown loam, granular, friable.
6-30” – 2.5 Y 5/4 Light yellowish brown stony fine sandy loam, granular, friable
ESHWT = 24” **Observed Water = 24”** **Ledge = 30”** **Roots = 30”**

12/20/23
Test Pit #9
0-9”- 10YR 3/3 Dark brown loam, granular, friable.
9-18” – 2.5 Y 5/4 Light yellowish brown stony fine sandy loam, granular, friable
18-36” - 2.5Y 5/3 Light olive brown loamy fine sand, massive, friable
36-72” - 2.5Y 5/3 Light olive brown loamy coarse-to-fine sand, granular, friable
ESHWT = 30” **Observed Water = 34”** **Ledge = None** **Roots = 36”**

12/20/23
Test Pit #10
0-6”- 10YR 3/3 Dark brown loam, granular, friable.
6-24” – 2.5 Y 5/4 Light yellowish brown stony fine sandy loam, granular, friable
24-32” - 2.5Y 5/3 Light olive brown loamy fine sand, massive, friable
32-72” - 2.5Y 5/3 Light olive brown loamy coarse-to-fine sand, granular, friable
ESHWT = 32” **Observed Water = None** **Ledge = None** **Roots = 34”**

12/19/23
Test Pit #11
0-10”- 10YR 3/3 Dark brown loam, granular, friable.
10-32” - 10YR 5/6 Yellowish brown stony loamy sand, granular, friable
32-76” - 2.5Y 5/4 Light olive brown coarse-to-fine sandy loam, granular, friable. Stony.
ESHWT = 36” **Observed Water = 36”** **Ledge = None** **Roots = 48”**

12/19/23
Test Pit #12
0-8”- 10YR 3/3 Dark brown loam, granular, friable.
8-32” - 10YR 5/6 Yellowish brown stony loamy sand, granular, friable
32-76” - 2.5Y 5/4 Light olive brown coarse-to-fine sandy loam, granular, friable. Stony.
ESHWT = 36” **Observed Water = 36”** **Ledge = None** **Roots = 40”**

12/19/23
Test Pit #13
0-10”- 10YR 3/3 Dark brown loam, granular, friable.
10-30” - 10YR 5/6 Yellowish brown loamy fine-to-medium sand, granular, friable
30-60” - 2.5Y 6/4 Light yellowish brown fine-to-medium sand, granular, friable
60-80” - 2.5Y 6/4 Light yellowish brown very stony loamy sand, massive, firm
ESHWT = 60” **Observed Water = 80”** **Ledge = None** **Roots = 60”**

12/19/23
Test Pit #14
0-8”- 10YR 3/3 Dark brown loamy sand, granular, friable.
8-18” - 10YR 5/6 Yellowish brown loamy fine-to-medium sand, granular, friable
18-30” - 2.5Y 5/6 Light olive brown loamy fine-to-medium sand, granular, friable
30-56” - 2.5Y 4/3 Olive brown very stoney fine-to-medium sandy loam, firm
ESHWT = 45” **Observed Water = None** **Ledge = 56”** **Roots = 40”**

12/19/23
Test Pit #15
0-10”- 10YR 3/3 Dark brown loamy sand, granular, friable.
10-20” - 10YR 5/6 Yellowish brown loamy fine-to-medium sand, granular, friable. Stony
20-36” - 2.5Y 5/6 Light olive brown loamy fine-to-medium sand, granular, friable
36-100” - 2.5Y 6/4 Light yellowish-brown medium-to-coarse sand, granular, very friable
ESHWT = 80” **Observed Water = None** **Ledge = None** **Roots = 70”**

12/19/23
Test Pit #16
0-10”- 10YR 3/3 Dark brown loamy sand, granular, friable.
10-24” - 10YR 5/6 Yellowish brown loamy fine-to-medium sand, granular, friable. Stony
24-96” - 2.5Y 6/4 Light yellowish-brown medium-to-coarse sand, granular, very friable
ESHWT = 80” **Observed Water = None** **Ledge = None** **Roots = 72”**

12/19/23
Test Pit #17
0-6”- 10YR 3/3 Dark brown loamy sand, granular, friable.
6-12” - 10YR 5/6 Yellowish brown stony sandy loam, granular, friable
12-36” - 2.5Y 5/6 Light olive brown gravelly fine-to-medium sand, granular, friable
36-96” - 2.5Y 6/4 Light yellowish brown gravelly medium-to-coarse sand, single grain, loose
ESHWT = 60” **Observed Water = 60”** **Ledge = None** **Roots = 72”**

12/19/23
Test Pit #18
0-10”- 10YR 3/3 Dark brown loamy sand, granular, friable.
10-20” - 10YR 5/6 Yellowish brown stony sandy loam, granular, friable
20-84” - 2.5Y 6/4 Light yellowish brown gravelly medium-to-coarse sand, single grain, loose
ESHWT = 65” **Observed Water = None** **Ledge = boulders** **Roots = 60”**

12/19/23
Test Pit #19
0-8”- 10YR 3/3 Dark brown loamy sand, granular, friable.
8-20” - 10YR 5/6 Yellowish brown loamy fine-to-medium sand, single grain, loose
20-43” - 2.5Y 6/6 Olive yellow fine-to-medium sand, single grain, loose
43-72” - 2.5Y 4/3 Olive brown fine-to-medium sandy loam, massive, firm
ESHWT = 45” **Observed Water = 50”** **Ledge = None** **Roots = 65”**

12/19/23
Test Pit #20
0-6”- 10YR 3/3 Dark brown loam, granular, friable.
6-26” - 10YR 5/6 Yellowish brown gravelly sandy loam, granular, friable
26-60” - 2.5Y 5/6 Light olive brown gravelly fine-to-medium sand, granular, friable
60-75” - 2.5Y 4/3 Olive brown stony sandy loam, massive, moderately firm
ESHWT = 28” **Observed Water = 28”** **Ledge = Boulders** **Roots = 30”**

12/19/23
Test Pit #21
0-8”- 10YR 3/3 Dark brown loamy sand, granular, friable.
8-26” - 10YR 5/6 Yellowish brown loamy fine-to-medium sand, single grain, loose
26-70” - 2.5Y 6/6 Olive yellow fine-to-medium sand, single grain, loose
70-85” - 2.5Y 4/3 Olive brown fine-to-medium sandy loam, massive, firm
ESHWT = 65” **Observed Water = None** **Ledge = None** **Roots = 70”**

12/19/23
Test Pit #22
0-8”- 10YR 3/3 Dark brown loamy sand, granular, friable.
8-28” - 10YR 5/6 Yellowish brown fine sandy loam, granular, friable
28-80” - 2.5Y 4/3 Olive brown fine sandy loam, massive, friable
ESHWT = 48” **Observed Water = 72”** **Ledge = None** **Roots = 40”**

12/20/23
Test Pit #23
0-6”- 10YR 3/3 Dark brown loam, granular, friable.
6-20” - 10YR 5/4 Light olive brown loamy fine sand, granular, friable
20-52” - 2.5Y 5/2 Grayish brown loamy fine sand, granular, friable
52-84” - 2.5Y 5/2 Grayish brown loamy fine sand, massive, friable
ESHWT = 38” **Observed Water = 60”** **Ledge = None** **Roots = 40”**

12/20/23
Test Pit #24
0-12”- 10YR 3/3 Dark brown loam, granular, friable.
12-22” - 10YR 5/6 Yellowish brown fine sandy loam, granular, friable
22-50” - 2.5Y 5/2 Grayish brown bouldery loamy fine sand, granular, friable
50-90” - 2.5Y 5/2 Grayish brown bouldery loamy fine sand, massive, firm
ESHWT = 36” **Observed Water = 86”** **Ledge = None** **Roots = 40”**

12/20/23
Test Pit #25
0-4”- 10YR 3/3 Dark brown loamy sand, granular, friable.
4-20” - 10YR 5/6 Yellowish brown fine sandy loam, granular, friable
20-80” - 2.5Y 5/2 Grayish brown loamy fine sand, massive, firm. Stony
ESHWT = 36” **Observed Water = 68”** **Ledge = None** **Roots = 38”**

12/20/23
Test Pit #26
0-4”- 10YR 3/3 Dark brown loam, granular, friable.
4-24” - 10YR 5/6 Yellowish brown fine sandy loam, granular, friable
24-42” - 2.5Y 6/6 Olive yellow loamy fine sand granular, friable. Stony
42-80” - 2.5Y 6/3 Light yellowish brown loamy fine sand, massive, firm. Stony
ESHWT = 29” **Observed Water =None** **Ledge = None** **Roots = 36”**

12/20/23
Test Pit #27
0-6”- 10YR 3/3 Dark brown loamy sand, granular, friable.
6-20” - 10YR 5/6 Yellowish brown fine sandy loam, granular, friable
20-60” - 2.5Y 5/2 Grayish brown loamy fine sand, massive, firm. Stony
ESHWT = 24” **Observed Water = 24”** **Ledge = 60”** **Roots = 24”**

12/20/23
Test Pit #28
0-4”- 10YR 3/3 Dark brown loam, granular, friable.
4-20” - 10YR 5/6 Yellowish brown very stony fine sandy loam, granular, friable
20-40” - 2.5Y 5/4 Light yellowish brown gravelly fine-to-coarse sand, single grain, loose
ESHWT = 36” **Observed Water = 40”** **Ledge = 40”** **Roots = 36”**

12/20/23
Test Pit #29
0-4”- 10YR 3/3 Dark brown loam, granular, friable.
4-26” - 10YR 5/6 Yellowish brown fine sandy loam, granular, friable
26-60” - 2.5Y 5/2 Grayish brown loamy fine sand, massive, firm. Stony
ESHWT = 26” **Observed Water = 30”** **Ledge = None** **Roots = 30”**

12/20/23
Test Pit #30
0-5”- 10YR 3/3 Dark brown loam, granular, friable.
5-24” – 2.5 Y 5/4 Light yellowish brown stony fine sandy loam, granular, friable
24-44” - 2.5Y 5/3 Light olive brown loamy fine sand, massive, friable
44-76” - 2.5Y 5/3 Light olive brown loamy coarse-to-fine sand, granular, friable
ESHWT = 26” **Observed Water = 40”** **Ledge = None** **Roots = 40”**

12/20/23
Test Pit #31
0-6”- 10YR 3/3 Dark brown loam, granular, friable.
6-36” – 2.5 Y 5/4 Light yellowish brown stony fine sandy loam, granular, friable
ESHWT = 24” **Observed Water = 24”** **Ledge = 36”** **Roots = 30”**

12/20/23
Test Pit #32
0-4”- 10YR 3/3 Dark brown loam, granular, friable.
4-36” – 2.5 Y 5/6 Light olive brown loamy fine-to-coarse sand, granular, friable
36-90” – 2.5 Y 5/1 Gray coarse-to-fine sand, single grain, loose
SHWT = 37” **Observed Water = 40”** **Ledge = None** **Roots = 12”**

12/20/23
Test Pit #33
0-6”- 10YR 3/3 Dark brown loam, granular, friable.
6-34” – 7.5 Y 4/4 Brown fine sandy loam, granular, friable
34-48” – 2.5 Y 5/4 Light olive brown stony fine sandy loam, granular, friable
SHWT = 36” **Observed Water = 36”** **Ledge = 48”** **Roots = 34”**

Test Pits were logged by:

Christopher A. Guida, CSS, CWS
NH Septic Designer #1401

Kenneth Robinson, CWS
NH Licensed Designer #1896

BAG
LAND CONSULTANTS

March 8, 2024

Joe & Jake Tamposi
P.O. Box 847
Hollis, NH 03049

RE: Tamposi Bros. Development Project [Map D; Lot 50-2]
NH Route 13, Brookline, NH (70.0 Ac +/-)

Dear Jake & Joe:

Site Specific Soil Survey Technical Letter Report

At your request, we visited the above-referenced property to perform Site-Specific Soil Map (SSSM) services that will assist in the planning / design of a proposed residential development project. Below is a summary report that details the standards utilized, mapped soil descriptions, and any limiting soil features encountered on the property.

Standards

The criteria under which the soil map was prepared is the *Site-specific Soil Mapping Standards for New Hampshire and Vermont*, Version 4.0, February 2011. The standards are based on a universally recognized taxonomic system of soil classification and are supported by national soil mapping standards established by the USDA National Cooperative Soil Survey. They allow for the development of multi-purpose soil map products that are carefully controlled and monitored through a state, regional and national quality assessment program. The SSSM's have been developed by the Society of Soil Scientists of Northern New England (SSSNNE) in cooperation with the USDA Natural Resources Conservation Service (NRCS). This map is a special product, intended for submission to NH DES Alteration of Terrain. This map is not a product of the USDA Natural Resource Conservation Service.

The Site-specific Soil Map Units identified on this property come from the *New Hampshire State-wide Numerical Soils Legend*, Issue 10, January 2011. This document represents the latest release of the permanent New Hampshire State-Wide Numerical Soils Legend since originally developed and adopted by the NRCS of NH in 1985.

Base Map

The soil map was developed on a base map of 1"= 100', with contour intervals of two (2') feet, and ground control indicators provided with detail of existing wetland flags, test pits and survey traverse stations. The highest elevation (526') on the property was located in the extreme northeast region. The lowest elevation (320') was located near the frontage road in the extreme southwest corner of the study area. Topographic & boundary survey information was compiled onto our base map by: Fieldstone Land Consultants, PLLC – Milford, NH.

Location

The study site is located, and has frontage, on the east side of NH Route 13 in Town of Brookline, NH. There are no abandoned concrete slabs or any evidence of any building structures on the subject parcel. The entire project study area is approximately 70.0 Ac.+/-. All proposed land improvements will be outside of any shoreland protection zone.

Geomorphology

The site is situated in an area of predominant upland glacial till parent materials. There is an intermittent stream flowing from east to west along the entire southern boundary of our study area. The observed soils had very good deep depth to ledge. This glacial till parent material onsite was deposited when the last glacial ice transported and dropped the soil over 10,000 years ago.

Legend

The following is the soil identification legend for the site-specific soil map units used in the preparation of the map.

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG CLASS	DRAINAGE CLASS
43	Canton	B	Well Drained
86	Hollis	D	Well Drained
445	Newfields (Stony)	B	Moderately-Well
515/P	Leicester (Stony)	C	Poorly Drained
125/VP	Scarboro (Stony)	D	Very Poorly Drained

Slope

Slope Designation	Percent Slope
B	0 to 8%
C	8 to 15%
D	15 to 25%
E	> 25%

Limiting Soil Features

Most of the upland areas on this property are in a natural undisturbed condition. Very little evidence of any prior earth excavations or timber clear cutting. The soils are capable of providing for excellent residential developmental improvements. The majority of soils mapped are **445** – Newfields a moderately-well drained, glacial till with no restrictive layers in the subsoil horizons. These soils have a moderate infiltration rate due to their fine to moderately coarse textures and would fall into a hydrologic soil group 'B'.

We mapped well drained **43 -** Canton soils on the highest and steepest elevations within the study area. These soils would also fall under a hydrologic soil grouping 'B' category. There were some very small areas that showed evidence of ledge being close to the soil surface. We mapped these soils as well drained **86** – Hollis soil series. These areas have very shallow depths of soil positioned over impervious ledge material and would have a HSG 'D' category. These areas are not good for designing storm water treatment structures. There are some poorly drained (**515**-Leicester) and very poorly drained (**125** – Scarboro) soil inclusions that are less than 2000 s.f. and those areas have been shown on the plan as flagged jurisdictional wetlands.

The combination of good buildable upland soils, the ease to setback from steep slopes, and with the proper placement of erosion control measures (BMP's) this project should pose no problems to any proposed land development improvements.

Sincerely,

Bruce A. Gilday

Bruce A. Gilday
Certified Soil Scientist

STATE OF NEW HAMPSHIRE
BRUCE
A.
GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

Cc: Chad E. Brenon, P.E.
Nathan R. Chamberlin, P.E.

BAG 3516
Attachment

REFERENCE PLANS:

1. "SUBDIVISION PLAN – TAX MAP D, LOT 51 – TIMOTHY J. AUSTIN – CAPTAIN SEAVER ROAD – BROOKLINE, NEW HAMPSHIRE", SCALE 1"=150', DATED MAY 15, 2019 AND LAST REVISED AUGUST 21, 2019 BY MERIDIAN LAND SERVICES, INC. RECORDED IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AS PLAN #40275.

2. "LOT LINE REVISION & – SUBDIVISION PLAN – TAX MAP F, LOTS 2, 4–1, 4–2 & 4–3 – LAND OF: – RUTH M. MORAN FAMILY TRUST OF 1992 – N.H. ROUTE 13 & POST OFFICE DRIVE – BROOKLINE, NEW HAMPSHIRE", SCALE 1"=80', DATED AUGUST 28, 2018 AND LAST REVISED OCTOBER 11, 2018 BY MERIDIAN LAND SERVICES, INC. RECORDED IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AS PLAN #39940.

3. "SUBDIVISION PLAN OF LAND – PREPARED FOR – BEAR HILL ASSOCIATES – BROOKLINE, N.H.", SCALE 1"=100', DATED MAY 27, 1986 AND LAST REVISED MAY 12, 1987, BY THOMAS F. MORAN, INC. RECORDED IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AS PLAN #20680.

4. "BOUNDARY – PLAN OF LAND – PREPARED FOR – ALBERT J. & CHRISTINE M. CYR – BROOKLINE, N.H.", SCALE 1"=50', DATED JULY 19, 1983, BY THOMAS F. MORAN, INC. RECORDED IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AS PLAN #15836.

5. "SUBDIVISION PLAN OF LAND – PHILIP & MADELINE SHATTUCK – RALMOND H. & LINDA M. BURGESS – BROOKLINE, N.H.", SCALE 1"=50', DATED DECEMBER 9, 1975, BY THOMAS F. MORAN, INC. RECORDED IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AS PLAN #9059.

6. "PLAN OF LAND – SUBDIVIDER – RUTH MCLAUGHLIN – 83 UNION STREET MILFORD, N.H. – LOCATED IN BROOKLINE, N.H.", SCALE 1"=100', DATED MARCH 1975 AND REVISED AUGUST 1975, BY EVERETT A. LEACH. RECORDED IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AS PLAN #8595.

7. "PLAN OF LAND OF WILLIAM A. & PEARL T. MEDLYN – ROUTE 13, BROOKLINE, N.H.", 3 SHEETS, SCALE 1"=100', DATED JANUARY 1970, BY EVERETT A. LEACH. RECORDED IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AS PLAN #4394.

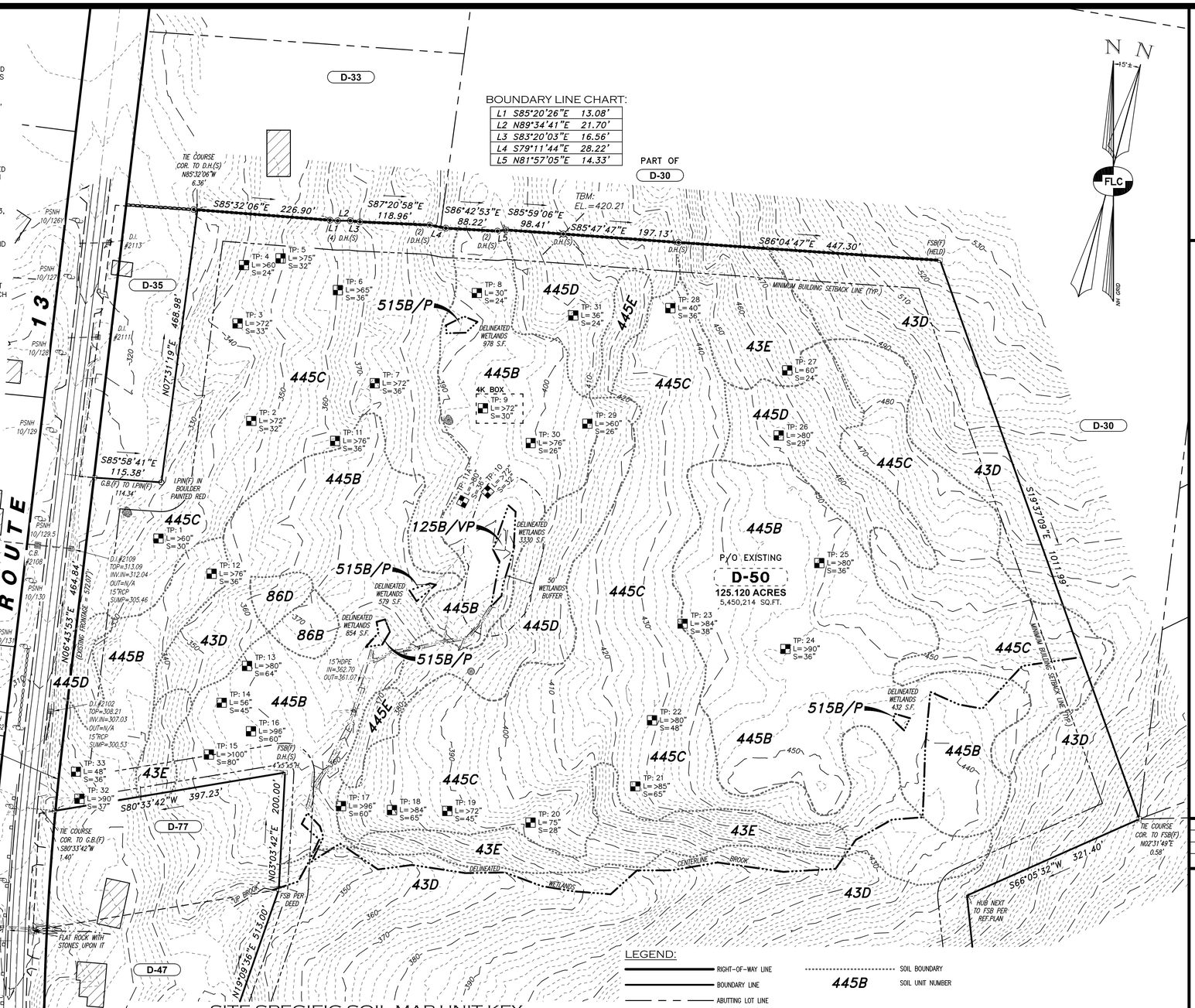
8. "PLAN OF THE J.H. HALL LAND – EAST OF THE BROOKLINE & MILFORD ROAD", SCALE: 20 RODS TO AN INCH, NOT DATED, PREPARER UNKNOWN. RECORDED IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AS PLAN #232–1.

9. "PLAN OF LAND – DIERDRE CARR – BROOKLINE, N.H.", SCALE 1"=50', DATED FEBRUARY 24, 1978, BY THOMAS F. MORAN, INC.

10. "PLAN OF LAND – ROLAND & GLADYS CLOUTIER – BROOKLINE, N.H.", SCALE 1"=50', DATED AUGUST 16, 1973, BY THOMAS F. MORAN, INC.

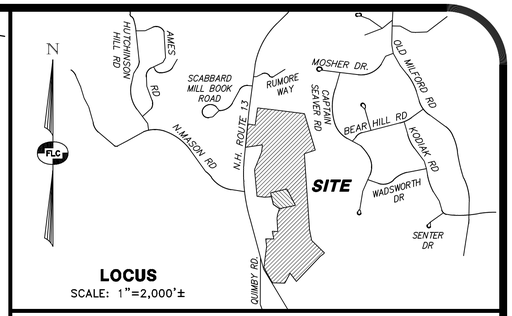
11. "STATE OF NEW HAMPSHIRE – HIGHWAY DEPARTMENT – PLAN OF PROPOSED – FEDERAL AID SECONDARY PROJECT – NO. 517(2) – BABOOSIC ROAD – TOWNS OF BROOKLINE & MILFORD – COUNTY OF HILLSBORO", N.H. PROJECT NO. O–2006, SCALE 1"=50', APPROVED SEPTEMBER 10, 1945.

12. "STATE OF NEW HAMPSHIRE – HIGHWAY DEPARTMENT – PLAN OF PROPOSED – FEDERAL AID SECONDARY PROJECT – NO. SN–FAS–517(1) – BABOOSIC ROAD – TOWN OF BROOKLINE – COUNTY OF HILLSBORO", N.H. PROJECT NO. P–2006, SCALE 1"=50', APPROVED DECEMBER 7, 1945.



BOUNDARY LINE CHART:

L1	S85°20'26"E	13.08'
L2	N89°34'41"E	21.70'
L3	S83°20'03"E	16.56'
L4	S79°11'44"E	28.22'
L5	N81°57'05"E	14.33'



LOCUS
SCALE: 1"=2,000'±

GENERAL NOTES:

1. THE OWNER OF RECORD FOR TAX MAP D LOTS 50 & 70 IS THE RICHARD A. MEDLYN REVOCABLE TRUST OF 2020, DAVID STRUM, SUCCESSOR TRUSTEE, 15 UNION STREET #3, MILFORD, NH 03055. DEED REFERENCE FOR THE PARCEL IS BK.9396, PG.2979, DATED DECEMBER 11, 2020 IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
2. THE PURPOSE OF THIS PLAN IS TO DEPICT THE SITE SPECIFIC SOIL CONDITIONS FOR THE NORTHER PORTION OF TAX MAP D LOT 50, AS SHOWN.
3. THE TOTAL AREA OF EXISTING TAX MAP LOT D–50 IS 5,450,214 SQ.FT. OR 125.120 ACRES WITH 599.57 FT. AND 572.07' FT. OF FRONTAGE ALONG N.H. ROUTE 13 FOR A TOTAL OF 1171.64 FT.
4. THE BOUNDARY INFORMATION SHOWN WAS DEVELOPED FROM DEEDS OF RECORD AND THE REFERENCE PLANS CITED HEREON TOGETHER WITH PRECISE FIELD SURVEYS PERFORMED BY THIS OFFICE DURING JANUARY AND FEBRUARY 2021.
5. HORIZONTAL ORIENTATION IS BASED ON NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM. VERTICAL DATUM IS NAVD88. BOTH ARE BASED ON THE REFERENCE PLAN AND FIELD GPS OBSERVATIONS THAT WERE UPLOADED TO AND CALCULATED BY THE NOAA ONLINE POSTIONING USER SERVICE (OPUS).
6. THE SURFACE FEATURES SHOWN WERE DERIVED FROM THE REFERENCE PLAN CITED HEREON TOGETHER WITH GROUND FIELD SURVEYS PERFORMED BY THIS OFFICE DURING THE MONTHS OF DECEMBER 2020, JANAURY & FEBRUARY 2021 AND JANAURY 2024, AND HAVE BEEN PROPERLY LOCATED TO THE BEST OF MY KNOWLEDGE AND BELIEF.
7. WETLANDS WERE IDENTIFIED AND DELINEATED ON THE SITE AS A RESULT OF A FIELD INSPECTION PERFORMED IN ACCORDANCE WITH THE 3–FACTOR WETLAND IDENTIFICATION STANDARD SET FORTH IN THE ACOE FEDERAL TECHNICAL REPORT BY BRUCE A. GILDAY, C.W.S. OF B.A.G. LAND CONSULTANTS ON DECEMBER 4, 2020.

SITE SPECIFIC SOIL SURVEY NOTES:

1. HYDROLOGIC SOIL GROUPS ARE DETERMINED BY Ksat VALUES FOR NEW HAMPSHIRE SOILS SPONSORED BY THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND SSSNNE SPECIAL PUBLICATION NO. 5 SEPTEMBER, 2009.
2. ALL MAP UNIT SYMBOLS USED ARE DERIVED FROM NH STATE-WIDE NUMERICAL SOIL LEGEND ISSUE #10 JANUARY 2011 WITH ONLY ONE SOIL TYPE PER MAP UNIT DELINEATION.
3. THE SOIL WITHIN AN AREA ENCLOSED BY A SOIL BOUNDARY LINE WILL HAVE A MINIMUM OF 75 PERCENT OF THE SOIL PROPERTIES INFERRED BY THE SOIL MAP SYMBOL DERIVED FROM THE KEY TO SOIL TYPES AND PLACED WITHIN THAT MAP UNIT DELINEATION.
4. LIMITING SOIL TYPE OR TYPES CAN MAKE UP A MAXIMUM OF 15 PERCENT OF THE MAP UNIT DELINEATION.
5. THE CONTROL SECTION FOR DETERMINING SOIL PROPERTIES IS FROM THE MINERAL SOIL SURFACE TO A DEPTH OF 40 INCHES EXCEPT FOR HISTOLS AND SOILS WITH A HISTIC EPIPDEON OR A MINERAL HISTIC.
6. THE MINIMUM SIZE DELINEATION IS 2000 SQUARE FEET. MINIMUM SIZE DELINEATIONS REFER TO MAP UNITS OF POORLY DRAINED, VERY POORLY DRAINED, ROCK OUTCROP, OR SLOPES GREATER THAN 25 PERCENT.

GRAPHIC SCALE
100' 50' 0 100' 200' 300'
IMPERIAL: 1"=100'

REV.	DATE	DESCRIPTION	C/O	DR	CK
–	–	–	–	–	–

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG CLASS	DRAINAGE CLASS
43	CANTON	B	WELL DRAINED
86	HOLLIS	D	WELL DRAINED
445	NEWFIELDS (STONY)	B	MODERATELY–WELL
515/P	LEICESTER (STONEY	C	POORLY DRAINED
125/VP	SCARBORO (STONY)	D	VERY POORLY DRAINED

NOTE: A & B SLOPES HAVE BEEN COMBINED FOR THE PURPOSES OF THIS PLAN

SLOPE DESIGNATION	PERCENT SLOPE:
B	0–8% SLOPES
C	8–15% SLOPES
D	15–25% SLOPES
E	>25% SLOPES

LEGEND:

- RIGHT–OF–WAY LINE
- BOUNDARY LINE
- ABUTTING LOT LINE
- EDGE OF PAVED ROAD
- EDGE OF GRAVEL ROAD
- EDGE OF WETLANDS
- 400 — 10' CONTOUR INTERVAL
- 402 — 2' CONTOUR INTERVAL
- EDGE OF TREE LINE
- D-33 — TAX MAP & LOT NUMBER
- WIRE FENCE
- G.B.(F) — GRANITE BOUND FOUND PIN & CAP [TRAVERSE]
- EXISTING EASEMENT
- SOIL BOUNDARY
- 445B — SOIL UNIT NUMBER

CERTIFICATION:

SOILS WERE MAPPED BY BRUCE A. GILDAY, C.W.S. OF B.A.G. LAND CONSULTANTS IN ACCORDANCE WITH SITE SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT PUBLISHED BY THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND, PUBLICATION NO. 3, AS AMENDED, VERSION 7.0 JULY 2021.

DATE: 3/7/24

STATE OF NEW HAMPSHIRE BRUCE A. GILDAY No. 012 CERTIFIED SOIL SCIENTIST

THIS MAP IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR ALTERATION OF TERRAIN PERMITTING. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT THE PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

SITE SPECIFIC SOIL PLAN
TAX MAP D LOT 50 & 70 - N.H. ROUTE 13
BROOKLINE, NEW HAMPSHIRE

PREPARED FOR:
TAMPOSI BROTHERS HOLDINGS, LLC
P.O. BOX 847, HOLLIS, NH 03049

LAND OF:
RICHARD A. MEDLYN REVOCABLE TRUST OF 2020
DAVID STURM, SUCCESSOR TRUSTEE
15 UNION ST, #3, MILFORD, NH 03055

SCALE: 1"=100' MARCH 7, 2024

Surveying ◆ Engineering ◆ Land Planning ◆ Permitting ◆ Septic Designs

FIELDSTONE LAND CONSULTANTS, PLLC
206 Elm Street, Milford, NH 03055
Phone: (603) 672-5456 Fax: (603) 413-5456
www.FieldstoneLandConsultants.com

Section 3.2

Inspection & Maintenance Manual

BROOKLINE WOODS
Route 13, Brookline, NH
Storm Water Management System
Inspection and Maintenance Manual

Introduction

The operation and maintenance of a storm water management system and its individual components is as critical to system performance as the design. Without proper maintenance, best management practices (BMPs) are likely to become functionally impaired or to fail, providing reduced or no treatment of storm water. Proper operation and maintenance will ensure that the storm water system and individual BMPs will remain effective at removing pollutants as designed and meeting New Hampshire's water quality objectives. Proper maintenance will:

- Maintain the volume of storm water treated over the long term;
- Sustain the pollutant removal efficiency of the BMP;
- Reduce the risk of re-suspending sediment and other pollutants captured by the BMP;
- Prevent structural deterioration of the BMP and minimize the need for expensive repairs;
- Decrease the potential for failure of the BMP.

The NH Department of Environmental Services Alteration of Terrain (AoT) regulations (Env-Wq 1500) require the long term maintenance of storm water practices, and stipulate the establishment of a mechanism to provide for ongoing inspections and maintenance.

In accordance with Env-Wq 1507.08 Long-Term Maintenance the mechanism for providing long-term maintenance practices for this development are as follows:

Responsible Maintenance Party:

Owner: Tamposi Brothers Holdings, LLC
PO Box 847
Hollis, NH 03049

Report Information:

- Tamposi Brothers Holdings, LLC will be the individual responsible for implementing the required reporting, inspection, and maintenance activities identified in the I & M manual.
- Tamposi Brothers Holdings, LLC will maintain all record keeping required by the I & M manual. Any transfer of responsibility for I & M activities or transfer in ownership shall be documented to the DES in writing.
- Inspection and maintenance reports shall be completed after each inspection. Copies of the report forms to be completed by the inspector are attached at the end of this manual, including:

  - Inspection checklist to be used during each inspection;
  - Inspection and maintenance logs to document each inspection and maintenance activity;
  - Photos of each drainage practice at the time of inspection.
- A plan showing the locations of all the storm water practices described in the I&M manual is attached at the end of this manual (pending local approval).

Maintenance Recommendations for Best Management Practices:

The following recommendations are to be used as a guide for the inspection and maintenance of the permanent erosion and sediment control measures.

Stormwater Management Basin

- Basins should be inspected at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
- Pretreatment measures should be inspected twice annually, and cleaned of accumulated as warranted by inspection, but no less than once annually.
- Inspect, repair and remove debris from headwalls, end sections and riprap aprons.
- Remove woody vegetation from the Stormwater Management Basin.
- Remove accumulated sediment from basin bottom and crushed stone as necessary.
- Dispose of sediments and other wastes in conformance with applicable local, state and federal regulations.
- If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limited to removal of accumulated sediments or reconstruction of the infiltration basin.
- Rain garden vegetation should be inspected at least annually and maintained in healthy condition, including pruning, removal and replacement of dead or diseased vegetation, and the removal of invasive species.
- sediments or reconstruction of the filter.

Conveyance Swales

- Swales should be inspected annually for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Perform periodic mowing; frequency depends on location and type of grass. Maintain a healthy stand of vegetation in swale.
- Remove debris and accumulated sediment based on inspection.

- Repair eroded areas, remove invasive species and dead vegetation, and reseed as warranted by inspection.

Stone Berm Level Spreaders

- Inspected annually for sediment accumulation, debris, and signs of erosion within the approach channel, spreader channel or down slope of the spreader.
- Remove debris upon inspection and mow annually to control woody vegetation within the spreader.
- Remove sediment when accumulation exceeds 25% of spreader channel depth.
- Repair any erosion and re-grade or replace stone berm material as warranted by inspection
- Reconstruct the spreader if down-slope channelization indicates that the spreader is not level or that discharge has become concentrated and corrections cannot be made through minor re-grading.

Drainage Catch Basins

- Inspect basins at least semi-annually.
- Vacuum the sediment basins when the sediment reaches one-half the depth from the bottom of the catch basin to the invert of the outlet pipe.
- Repair damaged basin grates immediately after the inspection.
- Repair pavement damage around the basins immediately after the inspection to prevent further damage to the structure or paved area.
- Dispose of sediments and other wastes in conformance with applicable local, state and federal regulations.

Outlet Protection - Riprap Aprons

- Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.
- Remove debris from apron area.

Treatment Swales

- Inspect the annually for accumulation of sediment and debris and for signs of erosion vegetation loss, and presence of invasive species.
- Perform periodic mowing; frequency depends on location and type of grass. Grass shall not be cut less than four (4) inches to maintain water quality flow depth.
- Remove debris and accumulated sediment whenever observed during inspection.
- Repair any eroded areas, remove invasive species and dead vegetation, and reseed with applicable grass mix as warranted by inspection.

Inspection Checklist /Maintenance Logs

The inspection checklist and maintenance logs following this report shall be used as a guide for the inspection reporting for this project.

Exhibit Plan

The accompanying plan identifies the stormwater practices that will need to be inspected as part of this I & M program.

Invasive Species Response

Description:

With respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem.

Maintenance:

1. Remove invasive plant species from the storm water management practices by pulling, either by hand for small plants or by hand shovel for shrubs and bushes.
2. Refer to the fact sheet prepared by the University of New Hampshire Cooperative Extension entitled Methods for Disposing Non-Native Invasive Plants for recommended methods to dispose of invasive plant species. (Attached to the back of this report)

Inspection Checklist

- ☐ Surface at Each Drainage Catch Basin
- ☐ Drainage Catch Basin Sumps
- ☐ Riprap Aprons at Headwall Outlets
- ☐ Outlet Structures
- ☐ Conveyance Swales
- ☐ Stone Berm Level Spreader
- ☐ Treatment Swale
- ☐ Headwall Inlets and Outlets

Inspection and Maintenance Log					
	BMP	Inspection Date	Inspected By	Maintenance Required?	Maintenance Performed
1				❑Yes ❑No	
2				❑Yes ❑No	
3				❑Yes ❑No	
4				❑Yes ❑No	
5				❑Yes ❑No	
6				❑Yes ❑No	
7				❑Yes ❑No	
8				❑Yes ❑No	
9				❑Yes ❑No	

Winter Deicing Operations

The use of deicing materials on-site shall be minimized. The use of deicing materials on-site shall be in compliance with the requirements of Town of Merrimack's Aquifer Conservation District and Well Head Protection Area. The individual overseeing the winter maintenance operations shall receive and maintain the New Hampshire Green Snow Pro certification as offered by the New Hampshire Technology Center at the University of New Hampshire, Durham, NH.

A log of winter deicing operations, tracking the type and amount of deicing materials applied on site, shall be maintained by the entity responsible for on-site winter maintenance operations. A copy of the completed logs for each season shall be filed with the BMP Inspection and Maintenance Logs.

Winter Maintenance Basics

- Anti-ice before the storm.
- Remove snow from surfaces as quickly as possible to reduce compaction.
- Plow before applying deicers to avoid dilution of the salt.
- Minimize deicer use during the storm.
- Never plow or blow snow into bodies of water, wetlands, traffic or into streets.
- Minimize back-up maneuvers to reduce chance of accidents.
- Limit use of salt and sand during the storm; use only to reduce bonding.
- Do not use salt to burn off snow.
- Use application rate chart to determine how much salt to use.
- Don't apply dry salt (sodium chloride) below 15º F pavement temperature. It will not melt fast enough to help.
- Below 15° F, use a wetted salt.
- For extreme cold, skip melting and use sand.
- Clean up spills.
- Accurately record the material used at each site.
- Pay attention to its effectiveness and record observations.
- Use only what is needed based on proper application rates for the conditions.
- Put extra back in salt pile or return extra bags.

Deicing Application Rate Guidelines for Parking Lots and Sidewalks

These rates are based on road application guidelines (LRRB 2012). Develop specific application rates by adjusting the current rates incrementally downward toward the guidelines. Where temperature categories overlap, select the rate most applicable to the present situation.

Pavement Temp. (ºF) and Trend (↑↓)	Weather Condition	Maintenance Actions	Application Rate in lbs./per 1000 square foot area			
			Salt Pre-wetted/ Pretreated With Salt Brine	Salt Pre-wetted/ Pretreated With Other Blends	Dry Salt	Winter Sand (abrasives)
>30º ↑	Snow	Plow, treat intersections only	0.75	0.5	0.75	not recommended
	Frz. Rain	Apply chemical	1.25	1.0	1.5	not recommended
30º ↓	Snow	Plow & apply chemical	1.25	1.0	1.5	not recommended
	Frz. Rain	Apply chemical	1.5	1.25	1.75.	not recommended
25 - 30º ↑	Snow	Plow & apply chemical	1.25	1.0	1.5	not recommended
	Frz. Rain	Apply chemical	1.5	1.25	1.75	not recommended
25 - 30º ↓	Snow	Plow & apply chemical	1.25	1.0	1.5	not recommended
	Frz. Rain	Apply chemical	1.75	1.5	2.25	3.25
20 - 25º ↑	Snow or Frz. Rain	Plow & apply chemical	1.75	1.5	2.25	3.25 for frz. rain
20 - 25º ↓	Snow	Plow & apply chemical	2.0	2.0	2.75	not recommended
	Frz. Rain	Apply chemical	2.5	2.0	3.0	3.25
15º to 20º ↑	Snow	Plow & apply chemical	2.0	2.0	2.75	not recommended
	Frz. Rain	Apply chemical	2.5	2.0	3.0	3.25
15º to 20º ↓	Snow or Frz. Rain	Plow & apply chemical	2.5	2.0	3.0	3.25 for frz. rain
0 to 15º ↑ ↓	Snow	Plow, treat with blends, sand hazardous areas	not recommended	3.0	not recommended	5.0 spot treat as needed
< 0º	Snow	Plow, treat with blends, sand hazardous areas	not recommended	4.5	not recommended	5.0 spot treat as needed

Instructions for using application rate table for calibrated spreaders

1. Using Deicing Application Rate Guidelines for Parking Lots and Sidewalks. Select the row (⟶) with the appropriate pavement temperature, temperature trend, and weather conditions.
2. Select the column (↓) that has the type of material used.
3. Find the box where the row (⟶) and columns (↓) intersect to find the application rate.
4. Compare those values to the calibration chart for the spreader.*
5. Select the correct spreader setting for the rate calculated.

Example:

1. Parking lot is 54,000 sq. ft.
2. Temperature: 22ºF and falling. It has finished snowing. (⟶)
3. Using salt pretreated with salt brine. (↓)
4. Find the 20 – 25º ↓ box. Follow it to the right to the column labeled "Salt Pre-wetted/pretreated with salt brine." Read the rate in the box. The box where the column and row intersect shows a rate of 2.0 /1000 square feet. (⟶↓)
5. Refer to the calibration chart in the vehicle and set the spreader to the setting that most closely matches the 2.0 lbs. /1000 square feet.
6. The mixture is ready to apply.

Instructions for using application rate table for spreaders that are NOT calibrated

Using the example above:

1. Calculate size factor: Divide the parking lot size (54,000 sq. ft.) by 1,000 sq. ft. 54,000/1,000 = 54. The size factor is 54.
2. Find application rate (2.0).
3. Multiply application rate by size factor 2 x 54 = 108.
4. The amount needed for the entire lot is 108 lbs. pre-wetted/pretreated salt brine.
5. Because the spreader is not calibrated, the setting is unknown.
6. Although the calibration setting is not known, this establishes the amount of salt to use and increases efficiency.
7. Determine the best method to spread the 108 pounds evenly across the parking lot.

Pavement area of the proposed roadways and parking areas = 125,000 sq.ft.

Deicing Log					
Air Temp.	Weather Conditions	Date of Application	Type of Deicer Used	Amount of Deicer Used	Deicer Applied By

STORMWATER BMPS: LANDSCAPING AND LAWN MAINTENANCE

AFFECTED FACILITIES

These Best Management Practices (BMPs) apply at all municipal and county facilities where pesticides or fertilizers are stored, mixed, applied, recycled or disposed. They also apply at any municipal or county properties where lawns or vegetation are cut, mowed, trimmed, fertilized and maintained. The major objectives of these BMPs are to minimize or prevent the discharge of pesticides, fertilizers, and landscape wastes to storm water and receiving waters. The use of fertilizers and pesticides on-site shall be in compliance with the requirements of Town of Merrimack's Aquifer Conservation District and Well Head Protection Area.

BACKGROUND

Landscape management activities include vegetation removal, pesticide application, fertilizer application, watering, and other gardening and lawn care activities. Weed control typically involves a combination of chemical (herbicide) application and mechanical methods. These practices may contribute pollutants to the storm drain system. Landscape chemicals and wastes can pollute storm water with sediments and toxics that can kill fish and wildlife and can

harm humans. Fertilizers can contribute to algae blooms, increase nutrient concentrations, and

deplete oxygen in receiving waters.

BEST MANAGEMENT PRACTICES Landscaping and Lawn Maintenance

- Mulch-mow grasses whenever possible.
- Sweep grass clippings from sidewalks or streets back on to grassy areas.
- Control soil erosion by seeding, sod, mats, mulching, terracing or other effective methods.
- Dispose of organic wastes by composting whenever possible. When composting is not possible, dispose of organic wastes in an approved disposal facility.
- Do not wash down or dispose of lawn clippings, leaves, tree trimmings, or other landscape waste in or near a storm drain, drainage ditch, or open body of water.
- Use mulch or other erosion control methods to prevent erosion of exposed soils and flowerbeds.
- Do not apply bark on top of plastic sheeting unless the area is enclosed by a barrier-like lawn edging or it is far away from a storm drain inlet. Bark on plastic is easily washed off by heavy rainfall.
- Irrigate with the minimal amount of water needed. Never water at rates that exceed the infiltration rate of the soil.
- Maintain all irrigation systems so that irrigation water is applied evenly and where it is needed, and so that a minimum amount of water falls on impervious surfaces or runs off from the target property.
- Repair broken or leaking sprinkler heads as soon as possible.
- Use automatic timers on all irrigation equipment to minimize run-off.

Application of Pesticides and Fertilizer

- Develop and implement an Integrated Pest Management (IPM) Plan.
    - Use manual and/or mechanical methods for weed/pest control and vegetation removal rather than chemical methods.
    - When chemicals are required, use the least toxic method to control animal and plant pests. Pheromone-based traps and sticky paper are often more effective than chemicals.
    - Beneficial organisms and biological control should be promoted.
- When chemical pesticides are used, use the most biodegradable pesticide that will accomplish the desired control.
- Pesticide application should be done only under the supervision of a Certified Pesticide Applicator.
- Follow all federal and state regulations governing use, storage and disposal of pesticides, herbicides and fertilizers and training of pesticide applicators ("Read the Label").
- Follow all manufacturers' recommendations for mixing, applying, cleaning-up, storage and handling of pesticides and fertilizers. Never over-apply.
- Time the application of pesticides and fertilizers to coincide with the manufacturer's recommendation for best results.
- Do not apply fertilizers during a heavy rainfall or if a heavy rainfall is expected.
- Do not apply a pesticide immediately before an irrigation cycle or when heavy rainfall is expected.
- Till fertilizers into the soil rather than broadcasting them.
- Use granular pesticides whenever possible since they result in lower application losses.
- Sweep pavement and sidewalks where fertilizers or other solid chemicals have fallen. Sweep the chemicals back onto grassy areas.
- Avoid broadcast spraying of pesticides. Choose an appropriate method of application such that application does not exceed the problem area. (Do not over-apply.)
- Fertilizer may be broadcast applied but apply at the proper application rate as recommended by manufacturer.
- Spot spray pesticides on infested areas whenever possible rather than treating a larger area.
- Designate "no spray zones" and/or "buffer areas" around water features (ponds, lakes or streams).
- Avoid spraying pesticides or fertilizers within 50 feet of any surface water (pond, lake or creek) or storm drainage structure (unless stricter limits apply).
- Do not apply fertilizers or pesticides in or near any drainage or irrigation ditch.
- Regularly inspect, maintain and calibrate all pesticide and fertilizer application equipment to ensure proper application rate.

Storage and Handling of Fertilizers and Pesticides

- Store and mix fertilizers and pesticides inside a covered area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
- Clean up any spills or leaks of pesticides and fertilizers promptly.
- Mix only the minimum amount of pesticide that will be needed for the immediate job.
- Triple rinse all pesticide application containers or sprayers. Dispose of rinsate properly.
- Do not pour rinsate onto ground or into any drainage system.
- Use rinse water from cleaning of containers and application equipment as a diluent for the next batch of that pesticide or apply to target areas.
- Dispose of excess or leftover chemicals and empty expired pesticide containers according to instructions on the label –preferably on the target pest or vegetated area or as hazardous waste.
- Do not dispose of excess, expired or waste pesticides or fertilizers in storm sewers, drainage ditches or any surface waters.

REQUIRED STRUCTURES AND EQUIPMENT

- All pesticide application equipment must be capable of immediate shut-off in the event of an emergency.
- Use automatic timers on all irrigation equipment to minimize run-off.

INSTALLATIONS REQUIRED FOR NEW CONSTRUCTION OR RENOVATIONS

- Design new or re-landscaped areas using xeriscape techniques to the maximum extent possible. Use hardy plant materials appropriate to the climate. (See “Storm Water Protection – It’s Part of the Landscaping Plan” published by KICP.)

REQUIRED EMPLOYEE AND CONTRACTOR TRAINING

- Train all current and new employees and contractors who conduct mowing or landscaping activities on this BMP.
- Conduct refresher training on this BMP for all employees and contractors who do mowing or landscaping activities as needed.
- Contracts should stipulate that all contracted employees have been trained in proper stormwater management BMPs.
- Contracts should stipulate that all contracted employees have been trained in proper stormwater management BMPs.
- Pesticide application should be done only under the supervision of a “certified pesticide applicator”.
- All employees who handle or apply pesticides or herbicides should be trained on the most recent Material Safety Data Sheets (MSDSs).

- Train employees on the proper methods for cleaning up spills or leaks of pesticides, herbicides and fertilizers. See BMPs: Spill Clean Up.

REQUIRED MAINTENANCE

- Maintain all irrigation systems so that irrigation water is applied evenly and where it is needed, and so that a minimum amount of water falls on impervious surfaces or runs off from the target property.
- Regularly inspect, maintain and calibrate all pesticide and fertilizer application equipment so that it can be set at the correct application rates.

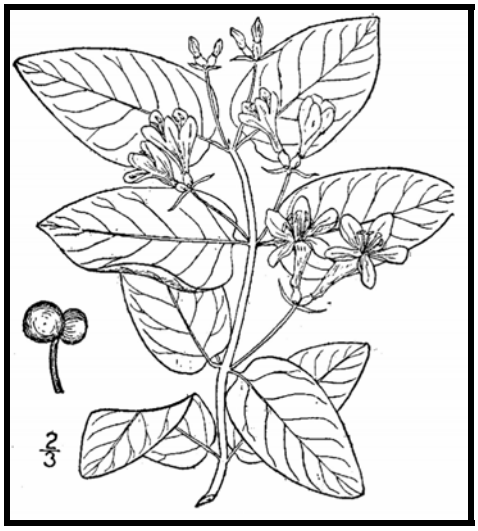
RECORDS

- Keep records of employees and contractors trained.
- Keep records of fertilizer and pesticide purchases, amounts and locations used.
- Keep an inventory of fertilizers and pesticides including expiration dates.

UNIVERSITY of NEW HAMPSHIRE
COOPERATIVE EXTENSION

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

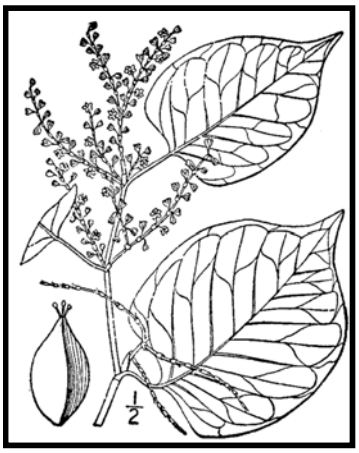
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let it dry for several weeks.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants non-viable before composting. Closely examine the plant before composting and avoid composting seeds.

Finally, *be diligent* looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

Plant Name	Method of Reproducing	Time of Year To Dispose	Methods of Disposal
Woody Plants*	**Fruit/Seeds**		
Norway Maple *(Acer platanoides)* European Barberry *(Berberis vulgaris)* Japanese Barberry *(Berberis thunbergii)* Autumn Olive *(Elaeagnus umbellata)* Burning Bush *(Euonymus alatus)* Morrow's Honeysuckle *(Lonicera morrowii)* Tatarian Honeysuckle *(Lonicera tatarica)* Showy Bush Honeysuckle *(Lonicera x bella)* Common Buckthorn *(Rhamnus cathartica)* Glossy Buckthorn *(Frangula alnus)*		Prior to fruit/seed ripening	Seedlings and small plants. ▪ Pull or cut and leave on site with roots up. No special care needed. Larger plants ▪ Use as firewood. ▪ Make a brush pile. ▪ Chip. ▪ Burn.
		After fruit/seed is ripe	Don't remove from site. ▪ Burn. ▪ Make a covered brush pile. ▪ Chip once all fruit has dropped from branches. ▪ Leave resulting chips on site and monitor.
Woody Plants*	**Fruits/Seeds/Plant Fragments**		
Oriental Bittersweet *(Celastrus orbiculatus)* Multiflora Rose *(Rosa multiflora)*		Prior to fruit/seed ripening	Seedlings and small plants. ▪ Pull or cut and leave on site with roots up. No special care needed. Larger plants ▪ Make a brush pile. ▪ Burn.
		After fruit/seed is ripe	Don't remove from site. ▪ Burn. ▪ Make a covered brush pile. ▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.

Plant Name	Method of Reproducing	Time of Year To Dispose	Methods of Disposal
Non-woody plants	**Fruits/Seeds**		
Garlic Mustard *(Alliaria petiolata)* Spotted Knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. Black Swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. Pale swallow-wort *(Cynanchum rossicum)* Giant Hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. Dame's Rocket *(Hesperis matronalis)* Perennial Pepperweed *(Lepidium latifolium)* Purple loosestrife *(Lythrum salicaria)* Japanese Stilt Grass *(Microstegium vimineum)* Mile-a-Minute Weed *(Polygonum perfoliatum)*		Prior to flowering	Depends on scale of infestation Small infestation: ▪ Remove and scatter Large infestation: ▪ Remove and pile. (You can pile on or cover with plastic sheeting) ▪ Monitor. Remove any re-sprouting material
		During and following flowering	Do nothing until the following year; Or Remove flowering heads and bag and let rot. Small infestation: ▪ Remove and scatter remaining material Large infestation: ▪ Remove and pile remaining material. (You can pile on or cover with plastic sheeting) ▪ Monitor. Remove any re-sprouting material
Non-woody plants *	**Fruits/seeds/plant parts**		
Common Reed (*Phragmites australis*) Japanese Knotweed *(Polygonum cuspidatum)* Bohemian Knotweed *(Polygonum x bohemicum)*	Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.		Small infestation: ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn Large infestation: ▪ Remove material to unsuitable habitat (dry, hot sunny or dry shaded location) and scatter or pile. • Monitor and remove any sprouting material. • Pile, let dry, and burn.

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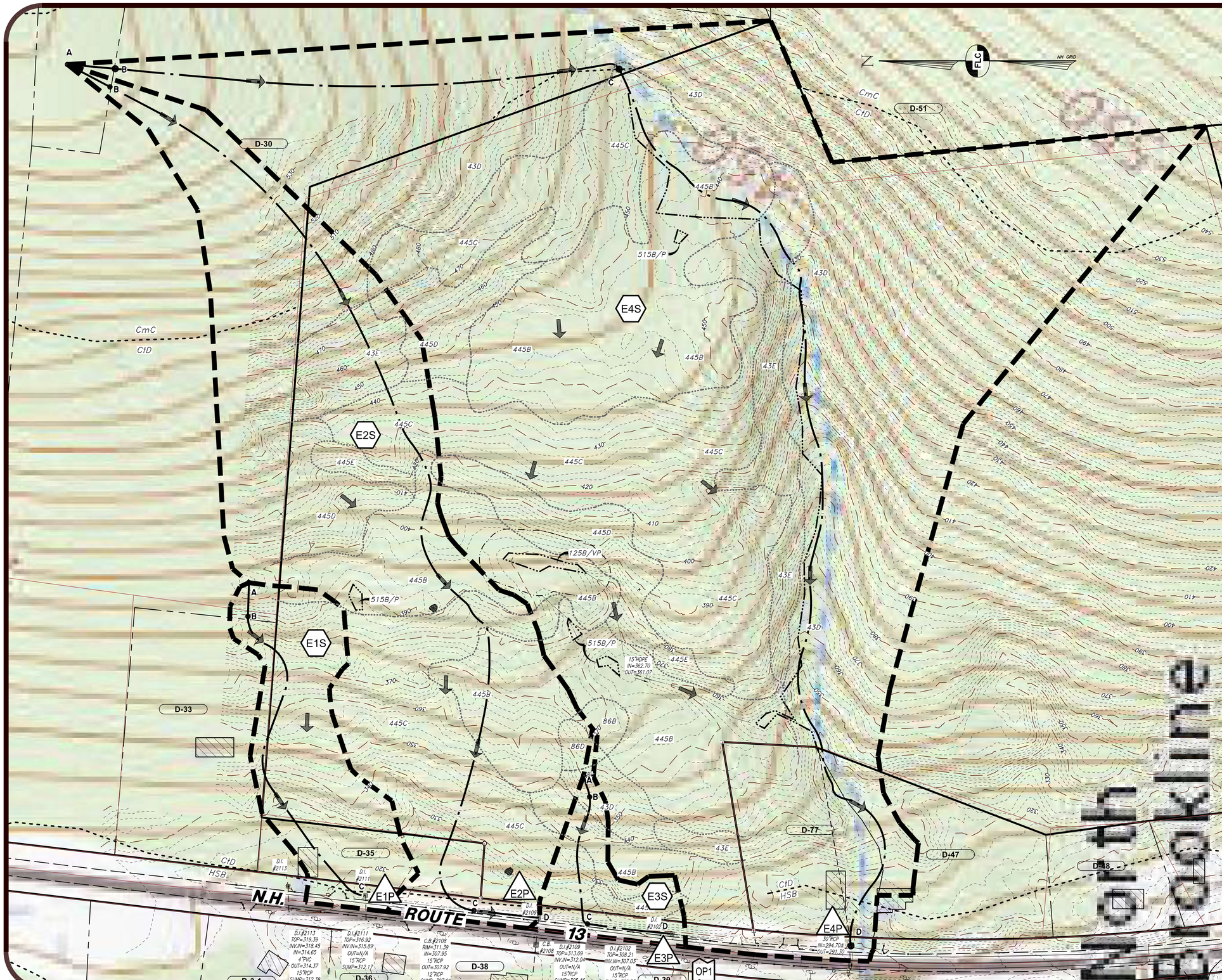
Section 3.3

Drainage Area Plans



SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG	DRAINAGE CLASS
43	CANTON	B	WELL DRAINED
86	HOLLIS	D	WELL DRAINED
445	NEWFIELDS (STONY)	B	MODERATELY-WELL
515/P	LEICESTER (STONEY	C	POORLY DRAINED
125/VP	SCARBORO (STONY)	D	VERY POORLY DRAINED

DRAINAGE AREA PLAN FEATURES

- HYDROLOGIC PATH
- WATERSHED BOUNDARY
- DIRECTION OF FLOW
- E1S — SUBCATCHMENT
- E1R — REACH
- E1P — POND OR PIPE
- OP1 — OBSERVATION POINT

GRAPHIC SCALES

100' 50' 0 100' 200' 300'

IMPERIAL: 1"=100'

REV.	DATE	DESCRIPTION	C/O	DR	CK
–	–	–		–	–

PRE-DEVELOPMENT DRAINAGE AREA PLAN

TAX MAP D LOT 50 & 70 - N.H. ROUTE 13

BROOKLINE, NEW HAMPSHIRE

PREPARED FOR:

TAMPOSI BROTHERS HOLDINGS, LLC

P.O. BOX 847, HOLLIS, NH 03049

LAND OF:

RICHARD A. MEDLYN REVOCABLE TRUST OF 2020

DAVID STURM, SUCCESSOR TRUSTEE

15 UNION ST, #3, MILFORD, NH 03055

SCALE: 1" = 100' MARCH 18, 2024

Surveying ✦ Engineering ✦ Land Planning ✦ Permitting ✦ Septic Designs

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206 Elm Street, Milford, NH 03055

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SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG	DRAINAGE CLASS
43	CANTON	B	WELL DRAINED
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125/VP	SCARBORO (STONY)	D	VERY POORLY DRAINED

DRAINAGE AREA PLAN FEATURES

- HYDROLOGIC PATH
- WATERSHED BOUNDARY
- DIRECTION OF FLOW
- 202 — SUBCATCHMENT
- 202R — REACH
- P 202 — POND OR PIPE
- OP1 — OBSERVATION POINT

GRAPHIC SCALES

100' 50' 0 100' 200' 300'

IMPERIAL: 1"=100'

REV.	DATE	DESCRIPTION	C/O	DR	CK
–	–	–		–	–

POST-DEVELOPMENT DRAINAGE AREA PLAN

TAX MAP D LOT 50 & 70 - N.H. ROUTE 13

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